Copeia, 2002(4), pp. 1197–1222

INDEX
COPEIA, 2002, NOS. 1–4

NEW NAMES

Amphisbaena ***hiata*** 792–796
Astyanax ***paris*** 1052–1056
Batrachoseps ***robustus*** 1016–1028
Characidium ***stigmosum*** 988–993
Cnemidophorus ***abaetensis*** 1071–1072, 1074–1076
Corydoras ***difluviatilis*** 1006–1015
Cyprichromis ***zonatus*** 1029–1036
Cyprinodon
albivelis 687–705
arcuatus 687–705
pisteri 687–705
Gigantactis ***longicauda*** 958–961
Halaphritis 433–440
platycephala 433–440
Hyphessobrycon ***heliacus*** 428–432
Karsten 787–791
Kassina ***schioetzi*** 800–814
Leptotyphlops ***alfredschmidti*** 131–136
Listrura ***tetraradiata*** 152–156
Mantidactylus ***madinika*** 1057–1062
Narcine ***oculifera*** 137–145
Odontobutis ***hikimius*** 104–110
Otocinclus ***tapirape*** 1063–1069
Paraclinus
arcanus 419–427
spectator 419–427
Palatogobius
grandoculus 716–718
Pogonopoma ***obscurum*** 402–410
Psednos 755–778
anoderkes 757–760, 774–775
cathetostomus 757–760, 768–773
delawarei 757–760, 773–774
dentatus 756, 758–761, 775
griseus 757–760, 771–772
islandicus 756, 758, 760, 763, 767–768, 774
melanocephalus 756, 758, 760, 762–763, 767, 774
mexicanus 756–759, 763–765, 770–772, 776–777
pallidus 758, 760, 770–771, 773, 775–777
spirohira 755–756, 758, 760, 763, 765–767, 774
Pseudotropheus ***galanos*** 147–150
Ptychochromis ***inornatus*** 120–130
Rimicola ***cabrilloi*** 441–444
Sauvagella ***robusta*** 67–76
Scorpaenodes ***quadrispinosus*** 973–978
Trichomycterus ***belensis*** 739–747

NEW AND ESTABLISHED NAMES

Abies
concolor 1024–1025
magnifica 1025
Abramis 669, 672–674
brama 666, 675
Acacia
greggi 695
orites 327–328
Acantharchus 898, 901–902
pomotis 903
Acanthicus 402
Acanthodactylus erythrurus 209, 212
Acanthopagrus 619, 627
berdi 623, 625–626, 629
Acanthopoma bondi 343
Accipiter
fasciatus 330
nisus 843
novaehollandiae 330
sp. 639
Acer rubrum 511
Acestridium 375–376, 388
discus 387
Acestrocephalus boehlkei 343
Accipenser platorynchus 287
Acheta 63, 490
Achiridae 642–652
Achirinae 642
Acipenser 213–219, 287–301
baerii 289–290, 292
b. baicalensis 292, 296, 298–299
brevirostrum 213–219, 290, 292, 296, 298–299, 532
fulvescens 217, 290–292, 296, 298–299
gueldenstaedtii 213, 290, 292, 296, 298–299
medirostris 290–292, 296, 298–299
mikadoi 290, 292, 296, 298–299
naccarii 290, 292, 296, 298–299
nudiventris 290, 292, 296, 298–299
oxyrhinchus
o. desotoi 213–214
o. oxyrhynchus 213–219
oxyrinchus 213, 290–292, 296, 298–299
o. desotoi 213–214, 1193
o. oxyrhinchus 213–219
persicus 290, 292, 296, 298–299
ruthenus 214, 217, 290–292, 296, 298–299
schrenckii 290–292, 296, 298–299
sinensis 290–292, 296, 298–299
sp. 214
stellatus 214, 287–301
sturio 217, 290, 292, 296, 298–299
transmontanus 214, 290–292, 296, 298–299
Acipenseridae 213, 287–301, 1172
Acipenseriformes 213–219, 287–288
Acipenseristomi 214
Acontias 731–732
meleagris 733, 735
Acrididae 956
Acrobates 326
Acrocheilus 668–669, 672–674

alutaceus 666, 675
Acrochordidae 907, 911
Acrochordus 911
granulatus 907
Actinopterygii 213–219, 450–455
Acyrtops 443
amplicirrus 443
Adenomera 1128
Adenorhinos 524
Adontosternarchus clarkae 342
Aechmea disthichanta 795
Aequidens latifrons 201
Afrana 1158
Afrixalus 246
Agalychnis 546
callidryas 314, 445
Agama
agama 39, 42, 725, 735
pallida 1002
savignyi 1002
stellio 111
Agamidae 116, 725, 857
Agamodon 719, 721–722, 729
anguliceps 723–724, 726–727, 729, 735
Agkistrodon
piscivorus 195–198
shedaoensis 843
Agosia 665, 669–670, 672–674
chrysogaster 675
Ahliesaurus berryi 564
Albanerpetontidae 255
Albula 485
vulpes 502
Algyroides marchi 209, 212
Alligator 635
mississippiensis 1078–1079
Alligatoroidea 633–634
Allocasuarina torulosa 325–326, 328
Allophrynidae 546
Alosa 496–498
mediocris 502
pseudoharengus 499, 502
Alosinae 497
Alphitonia excelsa 328
Alytes
cisternasii 253
obstetricans 253
Ambloplites 898, 900, 902
cavifrons 900, 903
rupestris 903
Ambloplitini 902
Amblyomma antillarum 553
Amblyopinae 787–791
Amblyopsidae 1172
Amblypygi spelaea 1172
Amblyraja radiata 1190
Amblytrypauchen 787–791
Ambystoma 489, 550, 824, 1161
barbouri 445
gracile 748–754
macrodactylum 748–754
maculatum 399
opacum 511–517
talpoideum 399, 489–495, 511–517, 824
texanum 824–829
tigrinum 466, 1152
t. nebulosum 494
Ambystomatidae 824
Ameiva ameiva 284, 553
Amia 534
calva 217, 533, 540
Amiidae 1172
Ammocrypta 3, 8
beani 4, 13
meridiana 4, 13
pellucida 4, 13
Amniota 255
Amphibia 254, 889, 1037–1051, 1160
Amphiesma 907
sauteri 908, 913
Amphisbaenidae 552, 721–722, 726, 729, 792–797
Amphisbaena 719–722, 726, 730, 792–797
alba 553, 719, 726–727, 735
anemariae 795
angustifrons 795
arenaria 796
bolivica 795
caeca 735
crisare 795
darwini 795
d. heterozonata 792–797
d. trachura 795
dubia 792–797
ewerbecki 728
fenestrata 735
fulginosa 720, 726
gonavensis 553
hiata 792–796
lesseri 795
lumbricalis 795
mertensii 795
miringoera 795
mitchelli 795
neglecta 795
prunicolor prunicolor 795
silvestrii 735
vermicularis 735
Apiocera 259
minckleyi 259
Apionichthys sp. A 342
Anaethalion angustus 533
Anarchias
allardiciei 485, 487
similas 484–485, 487
Anchoa 497–498
filifera 501
januaria 501
lamprotaenia 501
lyolepis 501
marinii 501
spinifer 501
tricolor 501
Anchovia 498
clupeoides 501
surinamensis 501
Anchoviella 497–498
brevirostris 501
carrikeri 501

guianensis 501
jamesi 501
lepidentostole 501
Ancistrinae 402
Ancistrus sp. 1069
Ancyclopsetta 649
quadrocellata 646–647, 652
Ancylocranium 721–722, 726
ionidesi 726
Anelytropis 733
Anguidae 552
Anguilla
mossambica 487
rostrata 487
Anguillidae 486–487
Anguilliformes 483–488
Anguis 732
Annelidae 957
Anniella 731
pulchra 733, 735
Anodontostoma 497–498, 500–501
chacunda 502
Anolis 39–43, 275, 417, 786
fuscoauratus 276, 283
gingivinus 39, 42
gundlachi 39
humilis 275–286
lineatopus 1002
nitens 275–276, 283
n. scypheus 275–286
ortonii 283
pogus 39
punctatus 283
sabanus 39–43
sericeus 725, 736
trachyderma 275–286
transversalis 283
wattsi 39
Anomochilus 134
Anoplohydrus aemulans 910
Anops 719–722, 726
bilabialatus 796
kingi 726–727, 735, 795
Anotheca 549
Antechinus 326
Anthocarpa nitidula 328
Antigonia combatia 564
Anura 166–172, 180–189, 364–373, 555, 742, 994–1005, 1037–1051, 1057–1062, 1128–1133
Apalone 783
ferox 779–785
mutica 100, 781, 786
spinifera 101, 504, 781, 1174
Aparallactus niger 134
Apariodon pongoense 342
Apateon 256
Aphanotorulus unicolor 343
Aphredoderus 1172
Aphyocharax sp. A 342
Apistoloricaria 338
condei 336, 339
Aplocheilus 190–194
lineatus 190–194
Apogon
indicus 977
semilineatus 903
Apostolepis
ambiniger 1147–1151
assimilis 1147–1151
cearensis 1147–1151
dorbignyi 1148–1150
flavotorquata 1147–1151
multicincta 1147–1151
sanctaeritae 1147–1151
sanctae-ritae 1147
Aprognathodon platyventris 486
Apteronotidae 52–61
Apteronotus 52, 54
albifrons 54
anas 52–61
apurensis 54, 342
bonapartii 54
brasiliensis 54
cuchillo 54
hasemani 52–61
jurubidae 54
leptorhynchus 53–54, 59–60
macrostoma 342
macrostomus 54
rostratus 53, 59–60
spurrellii 54
Aradidae 956
Araneae 949, 956
Araripelepidotes 540
Archontophoenix cunninghamiana 328
Archoplites 898, 900–902
interruptus 903
Archosargus 618, 624, 627
probatocephalus 623, 625–626, 628
Archosauria 1160, 1163
Argyrops 618–619, 627
spinifer 623, 625–626, 629
Ariidae 73, 176
Ariosoma scheelei 1099
Arius 125
madagascariensis 73
Armigatus 501
Aromobates 163
Artemia 883
franciscana 750
Artemisia tridentata 1023–1024
Artediellus 890
Ascalabos 534
Ascaphus 204
truei 969
Ascophyllum nodosum 472
Aseraggodes kobensis 646–647, 652
Asiatosuchus germanicus 636
Aspideretes 783
gangeticus 781, 786
Aspidoras 1006–1007, 1012
aff. *poecilus* 1013
albater 1013
belenos 1013
fuscoguttatus 1013
lakoi 1013
menezesi 1013
microgalaeus 1013

pauciradiatus 1013
poecilus 1013
rochai 1013
spilotus 1013
virgulatus 1013
Aspidorhynchiformes 540
Aspidorhynchus arawaki 533
Astronotus ocellatus 201
Astyanax 428, 1052–1056
abramis 1052, 1055
alburnus 1052
alleni 1052, 1055
asuncionensis 1052, 1055
brachypterygium 1052
cf. *fasciatus* 1055
cordovae 1052
correntinus 1052
cremnobates 1052
eigenmanniorum 1052, 1055–1056
erythropterus 1052
fasciatus 343, 940, 1052
gymnogenys 1052
laticeps 1052
leonidas 1052, 1056
leopoldi 431
linneatus 1052
marionae 1052
ojiara 1052, 1055–1056
paris 1052–1056
pellegrini 1052
ribeirae 1052
rubropictus 1052
scabripinnis paranae 1052
troya 1052, 1056
Atherinopsidae 313–320
Atheris barbouri 525
Atropoides 550
Auchenipteridae 173–179
Auchenistius 426
Aulura 721–722, 726, 730, 796
anomala 726–727, 735
Auchenopterus rubicundus 419–420
Australosuchus 633, 636
Austrolebias 916–927
adloffi 917–920, 923–926
affinis 917–920, 923, 925–926
alexandri 917–921, 923, 925–926
bellottii 917–920, 923–926
carvalhoi 917–921, 923–924, 926
cinereus 917–918, 921, 923–926
cyaneus 917–919, 921, 923, 925–926
gymnoventris 917–919, 921, 923–924
ibicuiensis 917–918, 921, 923, 925–926
luteoflammulatus 917–919, 921, 923–926
melanoorus 917–918, 921, 923–926
nigripinnis 917–919, 921, 923, 925–926
nioni 917
nonoiuliensis 917
patriciae 917
periodicus 917–918, 921, 923, 925–926
robustus 917–918, 921, 923–926
sp. a 920
sp. b 920
sp. c 920
sp. 1 917, 921, 923–926
sp. 2 917, 921, 923–926
sp. 3 917, 921, 923–926
vandenbergi 917–921, 923–926
vazferreirai 917
viarius 917–921, 923–925
Austrolethops 790
Awaous cf. *aeneofuscus* 73
Azemiops feae 525

Bachia 732–734
heteropa 725, 735–736
trisanale 733, 735
Bagridae 176
Baikia 721–722, 726
africana 726–727, 735
Bairdiella chrysoura 821
Balistidae 643, 652
Baloghia inophylla 328
Baru 633–634, 636
Basiliscus basiliscus 525
Bataguridae 785, 1119
Bathycetopsis oliveirai 339
Bathytyphlops 564
marionae 564
Batrachomorpha 254
Batrachoseps 1016–1028
aridus 1016
campi 1016–1028
gabrieli 1016
(*Plethopsis*) 1016–1028
relictus 1027
robustus 1016–1028
simatus 1018
stebbinsi 1016, 1018, 1026–1027
wrighti 1016–1028
Bavayia 638
Bedotiidae 73
Berycidae 643, 652
Beryciformes 652
Beryx 643–644, 649
sp. 646–647, 652
Bipedidae 721–722
Bipes 719–722, 724–726, 728–730, 732–735
biporus 720–721, 723–729, 735
canaliculatus 721, 723–725, 729, 735
tridactylus 724–725, 735
Bitia hydroides 912
Bittacidae 956
Blanus 721–722, 724, 726–730,
cinereus 719, 721, 723, 726–727, 729–730, 732, 735
strauchi 721
tingitanus 729, 735
Blarina
brevicauda 349
carolinensis 349
Blattidae 956
Boa 528, 732–733
constrictor 538, 735, 907
Boana 546
Boella 134
Boidae 907
Boiga irregularis 330
Boiginae 911

Bolitoglossa 550–551
rufescens 1167
Bollmannia 716
Bombaceae 561
Bombina 318
Boophis tephraeomystax 1060
Boops 624
boops 620, 623, 625–626, 628
Boopsinae 618–631
Boopsoidea inornata 623, 625–626, 629
Bothidae 643, 646–648, 651
Bothinae 643
Bothus 605
lunatus 646–647, 651
robinsi 646–647, 651
Bovichthyidae 433
Bovichtidae 433–440
Bovichtus 433–435, 437–439
angustifrons 433, 439
chilensis 433, 439
decipiens 433
diacanthus 433
elongatus 433
oculus 433
psychrolutes 433, 439
sp. 439
variegatus 433, 439
veneris 433
Brachyorrhos 910
albus 910
jobiensis 910
Brachyplatystoma 338
Brachypleura 643, 648
Brachypleurinae 643
Brachypleuronae 651
Brachyuranochampsa 636
Braconidae 956
Brevirostres 634
Brevoortia 497–498
aurea 502
pectinata 502
tyrannus 502, 605
Brochis 1006–1015
britskii 1013
multiradiatus 1013
splendens 1013
Bromeliaceae 795
Bronia 721–722, 726, 735, 796
brasiliana 726, 735
Bryconamericus uporas 1055
Bryobatrachus nimbus 364–373
Bufo 187, 553, 1153
americanus 253, 985
boreas 1023
bufo 466, 872, 986
calamita 466, 872, 986
coccifer 1167
fowleri 979–987
granulosus 553
marinus 1166–1167
mauritanicus 531
paracnemis 1001
periglenes 934
quercicus 968
spinulosus 466
terrestris 968, 1194
valliceps 984–985, 1167
viridis 253, 531
woodhousii 979, 985
w. australis 979
w. fowleri 535, 979
Bufonidae 552
Bufonoidea 546
Bullockia 742
Buprestidae 956

Cadea 721–722, 728, 796
blanoides 553, 726–728, 735
Caecogobius 790
Caecorhamdia urichi 938–942
Caesio 627
cuning 623, 625–626, 628
Caesionidae 618–619, 624
Caiman
crocodilus 1084
Calamaria 524
Calamus 624
nodosus 623, 625–626, 629
Calanoida 473, 475
Calddcluvia paniculosa 328
Callechelys marmorata 486
Callichthyidae 1006–1015
Callichthyinae 1012
Callicoma serratifolia 328
Callisaurus draconoides 415–416
Campostoma 669, 672–674
anomalum 666, 675
Canarium australasicum 328
Canis familiaris 330
Cantoria 910–911
annulata 911
violacea 906–915
Caprellidae 473
Caproidae 564
Carabidae 956
Caragobius 787, 790
Carangidae 564
Caranx 559
hippos 26
Carassius
auratus 1113
Carcharhiniformes 35
Carcharhinus
acronotus 35
limbatus 35, 356–363
perezi 25, 35
tilstoni 356–363
Carcharodon carcharias 24–25, 35
Careproctus 758
Caretta 783
caretta 307, 309
Carettochelys insculpta 93–103
Carex sp. 1023
Carphophis 528
amoenus 907
Cassina
maculata 801
weali 807

Catostomus
commersoni 1108
platyrhynchus 1155
Caudata 255, 344–355, 1194
Caulolatilus
dooleyi 564
williamsi 564
Ceiba 561
Cemophora
coccinea 518
c. copei 535
Cenchrus echinatus 303
Centracanthidae 618–631
Centracanthus 627
Centrarchidae 35, 201, 897–905, 1102–1105
Centrarchinae 898, 902
Centrarchus 898, 901–902
macropterus 903
Centrodraco oregona 565
Centrolenidae 546
Centropomidae 628
Centropomus undecimalis 623–628
Centroscyllium fabricii 1190–1191
Cephalanthus occidentalis 511
Cephaloscyllium ventriosum 25, 32, 34–35
Cerambycidae 956
Ceratioidei 1144–1146
Ceratodontidae 1172
Ceratodus 540
Ceratopetalum apetalum 323
Ceratopogonidae 745
Cerberus 908, 910–911
rhynchops 908–909, 912
Cercolophia
borelli 796
steindachneri 796
Cetengraulis 496–498, 500
edentulus 499, 501
Cetopsorhamdia phantasia 343
Cetorhinus maximus 24
Chalcides 732
mionectum 735
Chaenobryttus 898–899, 902
gulosus 900–901, 903
Chamaeleo chamaeleon 887
Chanidae 540, 1194
Channomuraena vittata 485, 487
Chanos chanos 502, 1194
Characidae 1052–1056
Characidium 988–993
bahiense 992
cf. *bahiense* 992
interruptum 991–992
(*Jobertina*) 991
lagosantense 992
lanei 992
occidentale 988–993
orientale 988–993
rachovii 988–993
sp. cf. *zebra*
steindachneri 342
stigmosum 988–993
vestigipinne 988–993
zebra 992
Characiformes 428–432, 1052–1056, 1171
Charactosuchus kugleri 553
Chauliodus 1145
Cheimerius nufar 623, 625–626, 628
Cheirocerus eques 342
Chelichthys asellus 342
Chelidae 785–786
Chelonia 783
mydas 101, 307, 309, 610–617, 783, 785
rugosa 785
Cheloniidae 785
Chelodina 783
Chelydra 712–714, 783
serpentina 101, 220–226, 415, 504–510, 706–715, 785
Chelydridae 785–786
Chiasmocleis panamensis 520–521
Chilopoda 957
Chilorhinus suensoni 487
Chirindia 719, 721–722, 728
ewerbecki 728
rondoensis 728, 735
swynnertoni 735
Chirocentridae 496
Chirocentrodon 496, 498, 500–501
bleekerianus 501
Chirocentroidea 496
Chirocentrus 496–498, 500–501
dorab 499, 502
Chironomidae 742, 745
Chirotes 730
Chlopsidae 483, 485–487
Chondrichthyes 356–363
Chondrodactylus 586, 592
Chondropython 321
Chondrosteidae 217
Chondrosteus 214
acipenseroides 217
Choneplax lata 1134–1136
Christyella 146
Chromis 146, 149
Chrysemys 712–713, 783, 1119
picta 224, 504, 507, 543, 779, 783, 785, 1120
p. belli 1118
p. dorsalis 1118
p. marginata 1118
p. picta 1118
Chrysoblephus cristiceps 623, 625–626, 629
Chrysomelidae 956
Chrysothamnus nauseosus 1023
Cichla 201
Cichlasoma 201, 259
bimaculatum 201
cutteri 201
minckleyi 259
nigrofasciatum 199–203
Cichlidae 73, 120–130, 146–151, 199–203
Cinnamomum oliveri 328
Citharichthys 647–648
arctifrons 605
xanthostigma 646–647, 652
Citharidae 646
Citharinae 643
Citharoides 643, 648
macrolepis 646–647, 651

Citharus 642–643, 648
Cladocera 473
Clariidae 176
Claudius 783
  angustatus 786
Clemmys
  guttata 1118–1120
  insculpta 1118–1120
  marmorata 1118–1120
  muhlenbergii 1118–1119
Clupea 496, 498
Clupeichthys 74–75, 497–498
  aesarnensis 67, 502
  bleekeri 67, 75, 502
  perakensis 502
Clupeidae 67–76, 564
Clupeiformes 501
Clupeinae 497
Clupeoidea 496–503
Clupeoidei 496–503
Clupeoides 73
Clupeomorpha 496–503
Cnemaspis chanthaburiensis 586
Cnemidophorus 553, 857, 1070–1077
  abaetensis 1071–1072, 1074–1076
  arenivagus 1070
  cryptus 1070
  deppii 277
  gramivagus 1070
  lacertoides 1070, 1076
  leachi 1070
  lemniscatus 284, 1070, 1076
  littoralis 1070–1077
  longicaudus 1070
  nativo 1070–1077
  ocellifer 1070–1077
  pseudolemniscatus 1070
  serranus 1070
  tigris 859
  vacariensis 1070
Cobitis 564
Coccinellidae 956
Coenobita compressus 416
Coilia 496–501
  rebentischii 501
Coiliidae 497, 500
Coleoptera 948–949, 956
Colopus 586, 592
Colostethus 44–51, 157–172
  beebi 48
  brunneus 157, 159, 165
  caeruleodactylus 44–51, 157, 159, 165–172
  guatopoensis 48
  inguinalis 48–49
  marchesianus 45, 49–50, 157–172
  oblitteratus 163
  palmatus 49
  riveroi 163
  stepheni 45, 49–50, 157, 159, 165
  subpunctatus 45, 49
  trilineatus 164
  trinitatus 45
Coluber 732
Colubridae 528, 552, 906–915, 1147–1151
Colubroidea 911
Comephoridae 1172
Conger cinereus 487, 1099
Congothrissa 74
Congothrissidae 74
Congridae 486–487, 1099
Coniophis 528
Copernicia sp. 795
Corallus 321
Coreidae 956
Corica 74–75
  laciniata 67
Cortaritermes fluviceps 795
Corydoradinae 1012
Corydoras 1006–1015
  acutus 1013
  adolfi 1013
  aeneus 1013
  aff. *cochui* 1006, 1012
  agassizi 1013
  amapaensis 1013
  ambiacus 1013
  approuaguensis 1013
  araguaiensis 1013
  arcuatus 1013
  atropersonatus 1013
  aurofrenatus 1013
  axelrodi 1013
  baderi 1013
  barbatus 1013
  bicolor 1013
  bifasciatus 1013
  blochi 1013
  bondi 1013
  b. coppenamensis 1013
  cochui 1013
  davidsandsi 1013
  difluviatilis 1006–1015
  ehrhardti 1013
  elegans 1013
  ellisae 1013
  ephippifer 1013
  eques 1013
  flaveolus 1007, 1013
  garbei 1007–1008, 1012–1013
  geoffroy 1006, 1013
  gossei 1013
  gracilis 1013
  guapore 1013
  habrosus 1013
  hastatus 1013
  heteromorphus 1013
  incolicana 1013
  julii 1013
  leopardus 1013
  leucomelas 1013
  loretoensis 1013
  macropterus 1013
  maculifer 1013
  melanistius 1013
  melanotaenia 1013
  metae 1013
  multimaculatus 1013
  myersi 1013

nanus 1013
napoensis 1013
nattereri 1013
octocirrus 1013
oelemariensis 1013
oiapoquensis 1013
ornatus 1013
osteocarus 1013
ourastigma 1013
paleatus 1013
panda 1013
paralelus 1013
pinheiroi 1013
polystictus 1013
prionotus 1013
punctatus 1013
pygmaeus 1013
rabauti 1013
reticulatus 1013
robiniae 1013
sanchesi 1013
sarareensis 1013
schwartzi 1013
septentrionalis 1013
seussi 1013
simulatus 1013
sodalis 1013
sp. A 1013
stenocephalus 1013
sterbai 1013
trilineatus 1013
triseriatus 1013
undulatus 1013
virginiae 1013
vittatus 1013
xinguensis 1013
zygatus 1013
Corymbia intermedia 328
Corytophanes 550
Cottidae 1193
Cottoperca 433–434, 437–439
gobio 433
trigloides 433, 439
Cottus 1155, 1193
Couesius 665, 669, 672–674
plumbeus 666, 675
Crassigyrinus 254
Craugaster 551
Creagrutus
cf. *muelleri* 343
gephyrus 342
sp. C 343
sp. D 343
Crenicichla 1172
Crenidens 624
crenidens 623, 625–626, 628
Cricotopus variabilis 474
Crinia 928
georgiana 928–937
Crocodilus affinis 636
Crocodylia 633–634
Crocodylidae 634, 636, 1085
Crocodyloidea 632–641
Crocodylomorpha 634
Crocodylus 632, 634–635, 1085
acutus 637
johnstoni 632, 637
moreletii 1078–1091
niloticus 1078
novaeguineae 632, 637
porosus 639, 1084
sp. 632
Crossorhombus kobensis 646–647, 651
Crossostoma lacustrae 1093
Crotalus 197
horridus 1084
viridis 849
v. viridis 197
Crustacea 473
Crystallaria 3, 8
asprella 4, 13, 451
Ctenobrycon hauxwellianus 342
Ctenotrypauchen 787, 790–791
Curculionidae 956
Cyathochromis 146
Cyclemys dentata 1119
Cydnidae 956
Cylindrophis 732, 734
rufus 735
Cyclopsetta 647
Cyclopteridae 472–476
Cyclopterus lumpus 472–476
Cyclura 553
pinguis 553
Cymatoceps nasutus 623, 625–626, 629
Cyniscia 721–722, 728
kraussi 728
leucura 726–728, 735
Cynodon dactylon 695
Cynoglossidae 642–643, 646–648, 652
Cynoglossinae 643, 651
Cynoglossus sp. 646–647, 652
Cynolebias 916–927, 1172
griseus 917–918, 920–921, 923–926
microphthalmus 917–918, 921, 923, 925–926
Cynolebiatina 916–927
Cynolebiatini 917
Cynopoecilidini 917
Cynops pyrrhogaster 245
Cynoscion regalis 821, 1137–1143
Cynothrissa 496–498
Cynotilapia 146, 150
Cyprichromis 1029–1036
leptosoma 1029–1036
microlepidotus 1029–1036
pavo 1029–1036
sp. 1030, 1033–1034, 1036
sp. aff. *leptosoma* 1029, 1034
sp. *zebra* 1030
zonatus 1029–1036
Cyprinella 669, 672–674
bocagrande 696
formosa 695
lutrensis 1092–1093, 1095
spiloptera 666, 675
Cyprinidae 665–678, 889, 1092–1097, 1172
Cyprinodon 687–705
albivelis 687–705

arcuatus 687–705
artatus 703
bovinus 687
b. bovinus 687
diabolis 691
elegans 687, 1191
eremus 687–705
eximius 687
fontinalis 691, 696, 699
macularius 687–705
nevadensis 691
pisteri 687–705
radiosus 691
salinus 691
sp. 687, 697, 702
sp. nov. 687, 697
variegatus 702, 817
Cyprinodontidae 687–705
Cyprinodontiformes 227–228, 916–927
Cyprinus 619
carpio 619, 622–623, 625–626, 629, 643, 667, 886, 1093
Czatkobatrachus 256

Dacelo novaeguineae 330
Dalophia 721–722, 728, 730
ellenbergeri 726–728, 735
pistillum 728, 735
Danio 201
rerio 201–202
Dapedium 533
Dasyatis sabina 462
Dasypeltinae 911
Dasyurus maculatus 330
Dayella 74
Decapterus tabl 564
Deirochelys 1119
reticularia 1118–1120
Delphacidae 956
Delturus 91, 403
Dendrelaphis 330
punctulatus 330
Dendrerpeton 255
Dendrobates
granuliferus 49
pumilio 45, 49
vanzolinii 49
Dendrobatidae 166–172
Dendropsophus 546
Dentex 619, 624
dentex 619, 623, 625–626, 628
tumifrons 623, 625–626, 628
Denticepitoidei 496, 498, 501
Denticeps 498–499, 501
clupeoides 496–497, 499–501
Denticinae 618–631
Dermatemydidae 785
Dermatemys 783
mawii 785
Dermochelidae 653
Dermochelys coriacea 307, 309, 653–664
Desmognathinae 851
Desmognathus 62–66, 350, 824
cf. *fuscus* 350
conanti 344–355
fuscus 344–355
f. conanti 344–355
f. fuscus 344–355
marmoratus 1161
monticola 62–66
ochrophaeus 62, 344–345, 351, 827
quadramaculatus 62–66
Diadophis 528
Dibamus 732–734
argenteus 735
novaeguineae 733
Dicentrarchus
labrax 531, 620, 625–626, 628, 903
punctatus 623, 625–626, 628
Dikellorhynchus tropidolepis 564
Dinodon 909–910
semicarinatus 906–915
Diplodinae 618–631
Diplodus 618, 623–624, 627
argenteus 623, 625–628
bermudensis 623, 625–628
cervinus 623, 625–626, 628–629
holbrooki 623, 625–627, 629
Diplometopon 719, 721–722, 724, 729
zarudnyi 723–724, 726–727, 729, 735
Diplopoda 949, 957
Dipsosaurus dorsalis 706
Diptera 949, 956
Dipturus laevis 1190
Discoglossus pictus 531
Discolomidae 956
Dissotichius 438
Dodecatheon sp. 1025
Doleserpeton 255
Doradidae 176
Dorosoma 496–498, 500–501
cepedianum 499, 502
Dorosomatinae 497
Doryphora sassafras 328
Draconetta oregona 565
Draconettidae 565
Drosophila virilis 393, 866
Duellmanohyla 546, 549
Dussumieria 497
acuta 502
Dussumieriinae 497, 500–501
Dyscophus cf. *insularis* 1060
Dysoxylum mollissimum 328

Echidna
bayeri 1099
catenata 484–485, 487
cf. *canina* 1099
delicatula 1099
leucotania 1099
nebulosa 485, 487, 1099–1100
nocturna 485, 487
polyzona 485, 487
Eckloniaichthys 444
Eclectus sp. 639
Egernia whitii 1194
Ehiravini 67–76
Ehirava 74–75

fluviatilis 67, 74
madagascariensis 68
Eigenmannia cf. *macrops* 343
Elacatinus 1134–1136
dilepis 1134–1136
(*Elacatinus*) 1134
gemmatus 1134–1136
macrodon 1135
pallens 1134–1136
(*Tigrigobius*) 1134
Elaphe
alleghaniensis 1193–1194
guttata guttata 535
hellena 1194
Elapidae 321–332, 907, 1098
Elasmodactylus 586–596
namaquensis 586
tuberculosus 586, 591–592
Elassoma 897–905, 1172
evergladei 903
Elassomatidae 897–905
Elateridae 956
Eleginopsidae 438
Eleocharis sp. 695
Eleutherodactylus 550–551
coqui 370–371
(*Craugastor*) 551
(*Eleutherodactylus*) 551
(*Euhyas*) 551
maussi 204
(*Syrrhophus*) 551
Elgaria coerulea 858
Ellimichthyiformes 501
Elmidae 742, 746
Elopomorpha 540
Elops 485, 502
Empusidae 956
Emydidae 785, 1118–1121
Emydoidea 1119
blandingii 221, 1118
Emydura 783
dentata 785
krefftii 786
Emys 1119–1120
orbicularis 1118–1119
Enchelycanassa cf. *canina* 1099
Enchelynassa canina 485, 487
Enchelycore
bayeri 1099
carychroa 485, 487
nigricans 484–485, 487
pardalis 485, 487
schismatorhynchus 485, 487
Enchodus zinensis 540
Encrasicholina 497
heteroloba 502
Encrasicolina 498
Endiandra muelleri 328
Enhydris 906–915
bennetti 912
bocourti 908, 910, 913
boucourti 912
chinensis 908, 910, 913
enhydris 908, 910, 913
indica 912
jagori 908, 910
jagorii 910, 913
matannensis 908, 910, 913
plumbea 908, 913
punctata 908, 910, 913
Engraulidae 496
Engraulini 501
Engrauliodea 496–503
Engraulis 496–498
anchoita 502
Engraulisoma taeniatum 343
Engyprosopon sp. 646–647, 651
Enneachanthini 898
Enneacanthus 898, 901–902
chaetodon 900, 903
gloriosus 900, 903
obesus 900, 903
Eocaecilia 255
Fopsetta jordani 646–647, 651
Epactionotus 375
Ephemeroptera 583
Epinephelus
sp. 903
striatus 605
Epipedobates femoralis 49–50
Eretmochelys imbricata 309, 615
Eremophilus 152
camposi 152
Erimystax 583
Eriogonum sp. 1023
Ernstichthys intonsus 339, 342
Erpeton 908, 910
tentaculatus 908–910, 913
Erythrolamprus 538
aesculapii 538
bizona 538
Eschericia coli 620
Etheostoma 1–14, 830
aquali 4, 13
blennioides 4, 12
caeruleum 830–835
camurum 4, 13
cinereum 4, 12
(*Etheostoma*) 450
euzonum 450–452
e. erizonum 451–452, 454
e. euzonum 451–452, 454
flabellare 4, 12
gracile 4, 12
kanawhae 450–451, 454
kennicotti 4, 12
nianguae 573–585
osburni 450
sagitta 3–4, 12
tetrazonum 450–455
tippecanoe 451, 1107
variatum 450
vitreum 4, 12
Etheostomatinae 1–14
Etroplus
canarensis 128
maculatus 128
suratensis 128

Etropus 605, 647–648
microstomus 605, 646–647, 652
Etrumeus 497–498, 501
teres 502
Eucalyptus 303
grandis 325, 328
microcorys 328
pilularis 322–323, 325–326, 328
sp. 328
Eumeces
elegans 736
fasciatus 1174
Eumenidae 956
Euonymus americanus 877
Eurycea 344
bislineata 62, 344, 1001–1002
cirrigera 391–401
guttolineata 349
longicauda 349
multiplicata 1194
Eurydactylodes 638
Eusuchia 634
Evynnis 618–619, 627
japonica 623, 625–626, 629
Exastilithoxus 87, 91
Exerpes 426

Farancia 528
Fejervarya vittigera 1044
Felis catus 330
Feylinia 731–732
grandisquamis 735
Ficus
fraseri 328
watkinsiana 325, 328
Forbesichthys agassizi 1172
Fordonia 908–910
leucobalia 906–915
Formicidae 956
Fundulidae 227–228
Fundulus 350, 882
auroguttatus 227–228
capensis 882
cingulatus 227–228
heteroclitus 817

Gadus morhua 605
Ghania 322
Gallirallus sp. 639
Gallotia galloti 111
Gambelia wislizenii 1002
Gambusia
affinis 21, 695, 1113
holbrooki 1113
nobilis 1191
Gammaridea 473–475
Gasterosteus 902
aculeatus 199, 903
Gastrophryne carolinensis 520, 555
Gastrotheca 246
ceratophrys 546
cornuta 546
Gavialis 632
gangeticus 637
Gavialoidea 634
Geckonia 586
Geissois benthami 328
Gekkonidae 208–212, 586–596, 948
Genyochromis 146
Geocalamus 719, 721–722
acutus 735
Geochelone 783
elephantopus 785
Geoemydidae 1118–1120
Gephyrochromis 146
Gerarda 908–910
prevostiana 906–915
Gigantactinidae 958–961, 1144–1146
Gigantactis 958–961
balushkini 958
ios 959–960
longicauda 958–961
macronema 958–961, 1145
microdontis 959–961
perlatus 1144
savagei 959–960
sp. 1144–1146
vanhoeffeni 1144
Gila 665, 669, 672–674
atraria atraria 668
copei 665
cypha 666, 675
robusta 701
sp. cf. *intermedia* 702
turneri 668
Gilchristella 67–76, 497–498
aestuarius 67, 502
madagascariensis 67–68
Ginglymostoma cirratum 24–38
Ginglymostomidae 24–38
Glanapteryginae 152, 154
Glanapteryx 152, 154–155
anguilla 155
niobium 155
Glossogobius ankaranensis 790
Gloydius 321
saxatilis 847
shedaoensis 843–850
Glyptocephalus 649
zachirus 646–647, 651
Gmelina leichardti 328
Gobiidae 73, 716–718, 787–791, 1134–1136
Gobioides 787
totoyensis 787–790
Gobiosoma 1134
Gonatodes humeralis 277
Gonorynchidae 540
Gopherus 783
agassizii 785
Gorgasia sp. 1099
Goslinea 338
Graptemys 350, 783, 1118–1121
barbouri 1118
flavimaculata 100, 102, 1118
geographica 1174
pseudogeographica 1118, 1120
pulchra 786, 1118
versa 1118

Gryllidae 956
Gymnarchoidea 891
Gymnocephalus cernuus 4, 13
Gymnocrotaphus curvidens 623, 625–626, 628
Gymnomuraena zebra 485, 487, 1099
Gymnophthalmidae 725
Gymnophthalmus 732
Gymnorhamphichthys hypostomus 343
Gymnothorax 1099
cf. *buroensis* 1099
cf. *gracilicauda* 1099
chilospilus 1099
enigmaticus 1099
fimbriatus 1099
flavimarginatus 1099
funebris 485, 487
fuscomaculata 485, 487
fuscomaculatus 485, 487, 1099
griseus 483–485, 487
jordani 485, 487
margaritophorus 1099
melatremus 483–488, 1099
miliaris 485, 487
monostigmus 1099
moringa 485, 487
nigromarginatus 485, 487
ocellatus 485, 487
panamensis 485, 487
pindae 485, 487
ruppelliae 1099
saxicola 485, 487
sp. 1099
thrysoideus 485, 487, 1099
undulatus 485, 487, 1099
vicinus 485, 487
zonipectis 1099
Gymnotiformes 52–61

Haemulidae 618–619, 621, 627–628
Haemulon sciurus 623, 625–626, 628
Halacarida 473–475
Halaphritis 433–440
platycephala 433–440
Halichoeres semicinctus 1194
Haplochromis burtoni 201
Harengula 496–498
clupeola 502
jaguana 67, 502
Harpacochampsa 636
Harpacticoida 473–475
Harpacticus 475
Harttia loricariformes 1069
Hatcheria 742
Heliconia 561–562, 564
berryi 564
fredberryana 564
Heliconeacae 561–562
Hemibrycon jabonero 342
Hemichromis 201
bimaculatus 201
Hemidactyliini 1161
Hemigrammus 428
Hemiodus unimaculatus 342
Hemiphractinae 546
Hemipsilichthys 403
gobio 91
mutuca 1068–1069
Hemiptera 948–949, 956
Hemisotidae 1161
Hemiscyllium ocellatum 35
Hemitremia 665
Henonemus punctatus 343
Heritiera
actinophylla 323, 325, 328
trifoliata 323, 325, 328
Herklotsichthys 497–498
displinotus 502
Heteroconger
hassi 1099
sp. 1099
Heterodon 528, 907
Heteromycteris japonicus 646–647, 652
Heterodontiformes 35
Heterodontus francisci 25, 30–31, 34–36
Heterotis 534
Hiodon 534
Hiodontoidei 891
Hippocampus zosterae 899, 903
Hippoglossoides platessoides 646–647, 651
Hippoglossus stenolepis 646–647, 651
Hirundo
pyrrhonota 21
rustica 21
Hisonotus notatus 1064, 1068–1069
Hodotermitidae 956
Hollandichthys multifasciatus 408
Holoshestes sp. 342
Homalopsinae 906–915
Homalopsis 908–909
buccata 908–910, 912–913
Homo sapiens 564
Homodactylus 586–596
turneri 587, 592
Hoplocephalus 322–323
bungaroides 330
stephensii 321–322
Hoplosebastes 973
pristigenys 977
Horiomyzon retropinnatus 342
Huehuecuetzpalli mixtecus 210–212
Huso 287–301
dauricus 290–292, 296, 298–299
huso 213–214
Hybognathus 669–674
hankinsoni 666, 675
Hybopsis
amblops 1092–1097
amnis 1092–1097
boucardi 1092–1093, 1095
dorsalis 1092–1093, 1095
hypsinotus 1092–1097
lineapunctata 1092–1097
rubrifrons 1092–1097
sp. 1092–1097
sp. cf. *winchelli* 1092, 1094, 1096
winchelli 1092–1097
zanema 1092, 1095–1096
zenema 1093

Hydromantes sp. 1027
Hydrophis brookii 907
Hyla 546, 550, 553
alvarengai 1001
andersonii 535
arborea 749
boans 546
bogartae 546
cataracha 550
crassa 546
eximia 549
godmani 550
gratiosa 984
heilprini 553
meridionalis 531
miliaria 549
miotympanum 546, 550
palmeri 546–547
pictipes 546
regilla 1023
versicolor 749, 984–986
Hylaedactylus conjunctus 1037
Hylaeochampsa 634
Hylambates
cochranae 807
maculatus 800
Hylidae 546, 552, 994–1005
Hylinae 546
Hymenoptera 948–949, 956
Hypancistrus 86–92
inspector 86–92
zebra 86–92
Hyperiidea 475
Hyperlophus 73
translucidus 67, 74
Hyperolius 246
chlorosteus 811
fusciventris 811
laurenti 811
marmoratus 984, 986
sylvaticus 811
Hyphessobrycon 428–432
bifasciatus 408, 431
elachys 429, 431
flammeus 408
heliacus 428–432
lowei 431
reticulatus 408
socolofi 431
Hypoclinemus mentalis 342
Hypomesus
transpacificus
t. nipponensis 891
t. transpacificus 891
Hypoptopoma 374–390, 1068
acutirostre 383
acutirostris 383
carinatum 374, 381
carinatus 381
gulare 386
inexspectata 386
sp. 1064
sp. 1 1069
sp. 2 1069
sp. 3 1069
steindachneri 386
wrightianum 377
Hypoptopomatinae 374, 376–377, 386, 1063, 1068
Hypoptomatini 1063, 1068
Hypostominae 402–410
Hypostomus 403
sp. 1069
sp. A 343
sp. B 342
Hypsiglena 528
Hyrachyus sp. 553

Icelus 890
Ictaluridae 176
Ictalurus 177
nebulosus 176
punctatus 176–177
Iguanidae 552–553, 725
Ilisha 496–498
africana 501
amazonica 501
elongata 501
kampeni 499
megaloptera 501
melastoma 501
striatula 501
Imantodes cenchoa 283
Imparfinis stictonotus 343
Insecta 473
Iodotropheus 146
Ipnopidae 564
Ipomoea pes-caprae 303
Iranocypris typhlops 165
Isbruckerichthys 403
Isbrueckerichthys 403
Isistius brasiliensis 24
Isopoda 473, 475
Isopsetta 646
isolepis 646–647, 651
Isoptera 948–949, 956

Judeichthyidae 540
Judeichthys 540
Jupiaba pinnata 431

Kalotermitidae 956
Kaloula 1037–1051
baleata 1037, 1039–1040, 1047, 1051
b. baleata 1037
b. kalingensis 1037
cf. *baleata* 1048
conjuncta 1037–1038, 1047, 1051
c. conjuncta 1037–1039, 1041, 1044, 1046–1048
c. meridionalis 1037, 1040–1041, 1048
c. negrosensis 1037, 1039, 1041, 1048
c. stickeli 1037, 1040–1041, 1048
kalingensis 1037–1041, 1044, 1046–1048, 1051
kocacii 1037, 1039–1040, 1044, 1046–1048, 1051
negrosensis 1037
picta 1037–1051
rigida 1037–1051
walteri 1038–1041, 1043–1045, 1047, 1049, 1051
Kambara 633–634, 636–638

Kaokogecko 586
Karauridae 255
Karsten 787–791
totoyensis 788
Kassina 800–814
arboricola 800–814
cassinoides 810, 813
cochranae 800–814
c. arboricola 800, 808
c. cochranae 800–801, 807
fusca 809, 813
decorata 801, 803, 807, 810
kuvangensis 810
lamottei 809, 813
maculata 800–801, 803, 807–810, 813
maculosa 813
mertensi 810, 813
schioetzi 800–814
senegalensis 807–809, 813
sp. 808
Kaupichthys hyoproroides 487
Kentropyx
calcarata 284
pelviceps 48, 284
Kinixys sp. 1119
Kinosternidae 786
Kinosternon 783
flavescens 504, 786
leucostomum 786
Klamathella milleri 668
Kneria auriculata 502
Knightia 73
Knodus
cf. *beta* 336, 343
victoriae septentrionalis 336, 342
Kronichthys 403
Kuhlia mugil 903

Labeotropheus 146
Labidochromis 146
Lacerta
agilis 20, 209, 212
bilineata 209, 212
geitje 592
lepida 209, 212
monticola 209, 212
schreiberi 209, 212
vivipara 209, 212, 840, 858
Lacertidae 208–212, 857
Lachesis muta 538
Laeops kiaharae 646–647, 651
Lagodon 618, 624, 627
rhomboides 623, 625–626, 629
Lampropeltis gestula gestula 535
Lates calcarifer 1159
Lateolabracidae 619
Lateolabrax 624
japonicus 623, 625–626, 628
latus 623, 625–626, 628
Laticauda 83, 1098–1101
colubrina 77–85, 1098
crockeri 83
frontalis 1098
laticaudata 1098
semifasciatus 1098
Latimeria chalumnae 891
Lavinia 668
Lebrunia sp. 1135
Leguminosae 795
Leiocephalus 553
Leiolepis belliana 725, 736
Leiopelma 204–207
archeyi 204–207
hamiltoni 204, 679–686
hochstetteri 204–207
pakeka 204–207
Leiopelmatidae 680
Leiostomus xanthurus 820–821, 1137–1143
Lentulidae 956
Lepidoblepharon 643, 648
ophthalmolepis 646–647, 651
Lepidochelys 783
kempii 785
olivacea 660, 785
Lepidodactylus labialis 1167
Lepidogalaxias salamandroides 1159
Lepidogalaxiidae 1172
Lepidomeda 665–678
albivallis 665–678
altivelis 665, 671
mollispinis 665–678
m. mollispinis 671, 674
m. pratensis 671–673
mollispinus mollispinus 666, 672–673, 675
m. pratensis 666, 672–673, 675
vittata 665–666, 669–675
Lepidopsetta 646
bilineata 646–647, 651
Lepidoptera 956
Lepidosperma clipeicola 322, 324
Lepidotes 540
Lepisosteidae 1172
Lepisosteus 534
Lepominae 898, 902
Lepomini 898
Lepomis 35, 898, 900–902, 1102–1105
auritus 900–902
cyanellus 445, 900–901, 903
gulosus 902–903
macrochirus 702, 900–901, 903, 1102
megalotis 1102–1105
microlophus 1102–1105
Leporacanthicus 87
Leposternon 719, 721–722, 726–730
microcephalum 726–728, 735, 795
polystegum 728, 735
Leptodactylidae 1128–1133
Leptodactylus 1128–1133
bolivianus 1132
chaquensis 1130, 1132
cunicularius 1132
elenae 1132
fallax 1131–1132
furnarius 1132
fuscus 1128, 1132
jolyi 1132
knudseni 1131–1132
labyrinthicus 1131–1132

leptodactyloides 1130, 1132
marmoratus 1128
melanonotus 1128–1133
mystaceus 1132
notoaktites 1132
ocellatus 1128, 1131–1132
pentadactylus 1128, 1131–1132
podicipinus 1128–1133
validus 1130–1132
wagneri 1130
Leptolebias minimus 917–918, 921, 923–924, 926
Leptolepis coryphaenoides 534
Leptotyphlopidae 131–136
Leptotyphlops 131–136, 528, 732
albifrons 538
alfredschmidti 131–136
dulcis 735
goudotii 735
humilis 735
rubrolineatus 131
teaguei 131–136
tesselatus 131–136
tricolor 131–136
Lethrinidae 618–631
Lethrinus
ornatus 623, 625–626, 628
rubrioperculatus 623–626, 628
Leuresthes
sardina 319
tenuis 313–320
Leurognathus 1161
Lichanura 528
Lile 497–498
piquitinga 502
Limanda aspera 646–647, 651
Limatulichthys punctatus 342
Limnonectes
macrocephalus 1044
woodworthi 1044
Linothlypis swainsonii 1084–1085
Liolaemus 246
Liophis 997
Liopsetta putnami 605
Liparidae 755–778, 891
Liparis 758
Liquidambar styraciflua 511
Lissamphibia 255
Lissemys 783
punctata 785
Listrura 152
camposi 152–156
nematopteryx 152–156
tetraradiata 152–156
Lithogeneinae 402
Lithognathus 624
mormyrus 619, 623, 625–626, 629
Lithoxus 87, 91
Lophostemon
conferta 322
confertus 323, 325, 328
Lophotus 241
Loricaria
cataphracta 375, 388
simillima 343
sp. A 343
Loricariidae 374–390, 402–410, 1063–1069
Loricariinae 91, 374, 387, 402
Loveridgea 721–722, 728
ionidesi 728, 735
Loxocemus 528
Luciogobius 790
Lutjanidae 618–619, 621, 624, 628
Lutjanus 627
decussatus 623, 625–626, 628
Luxilus 619, 669, 672–674
chrysocephalus 666, 675
zonatus 622–623, 625–626, 629
Lycengraulis 497–498
Lycodes
mcallisteri 891
sagittarius 891
Lycothrissa 497–498
Lycothryssa crocodilus 502
Lygaeidae 956
Lygodactylus sp. 948
Lyopsetta exilis 646–647, 651

Mabuya 858
acutilabris 952
agilis 857–864
agmosticha 861
bistriata 862
caissara 861
heathi 861
macrorhyncha 861
margaritifer 943–957
nigropunctata 862
spilogaster 952
striata sparsa 952
sulcata 952
variegata 952
Maccullochella peelii 1159
Macristiella 564
perlucens 564
Macrobdella decora 445–449
Macrochelys 783
Macroclemys temminckii 786
Macropoma 540
willemoesii 540
Macropsobrycon uruguayanae 177
Macrouridae 564
Malacanthidae 564
Malacanthus plumieri 564
Malaclemys 1118–1121
terrapin 1118, 1120
Malacoglanis gelatinosus 342
Malapteruridae 176
Malayemys subtrijuga 542
Mallotus villosus 314
Mammalia 160
Manis javanica 1100
Mannophryne
oblitterata 48–49
trinitatus 45
Mantella 1057–1062
betsileo 1060
Mantellidae 1057–1062
Mantidactylus 1057–1062

argenteus 1057
bertini 1057
bloomersae 1057, 1059
(*Bloomersia*) 1057–1062
depressiceps 1061
domerguei 1057, 1059
grandisonae 1057, 1059
guibei 1057
(*Guibemantis*) 1061
guttulatus 1057
kely 1057, 1059
madinika 1057–1062
sarotra 1057, 1059–1061
wittei 1057, 1059–1061
Mantidae 956
Margariscus 665, 669, 672–674
margarita 666, 675
Mauremys 783
caspica 785
leprosa 785
Maylandia 150
Mecoptera 956
Meda 665–678
fulgida 665–666, 672–673, 675, 701–702
Megalancistrus 87, 91
Megalebias 916–927
cheradophilus 917–926
elongatus 917–919, 921–925
monstrosus 917–925
prognathus 917–919, 921–925
wolterstorffi 917–926
Megalonema 338–339
platycephalus 336
cf. *xanthum* 343
Megalops 485
Megapodius sp. 639
Mekosuchinae 632–641
Mekosuchus 633, 636
inexpectatus 633, 636–637
kalpokasi 632–641
sanderi 633, 636–637
whitehunterensis 633, 636
Melamphaidae 652
Melanochromis 146
Melichthys 643–644, 649
niger 646–647, 652
Melittidae 956
Melomys cervinipes 329
Menticirrhus 815
americanus 815, 821
littoralis 815
saxatilis 815–823
Mesobaena 721–722, 728, 796
huebneri 726–728, 735
Mesobius berryi 564
Mesturus 534
Metopacanthus 533
Metriaclima 146, 150
zebra 146, 150
Microdonophis altipennis 798
Microgadus proximus 605
Microgobius 716
Microhylidae 553, 1037–1051, 1161
Microlepidogaster perforatus 1064, 1068
Micropercops 109
Micropogonias undulatus 817, 820, 1137–1143
Micropteringe 901
Micropterini 898
Micropterus 898, 901–902
dolomieu 903
salmoides 35, 702, 886, 903
Microstomus 649
bathybius 646–647, 651
pacificus 606, 646–647, 651
Microthrissa
minuta 67
royauxi 67
Micrurus stewarti 520
Mimagoniates 177
Mimulus sp. 1025
Mixophyes fasciolatus 1001
Moapa 665, 669, 672–674
coriacea 666, 675
Mochokidae 176
Moenkhausia 428
cf. *intermedia* 343
cf. *xanthum* 343
copei 336, 342
megalops 342
pittieri 431
Mollusca 473
Monacanthidae 559
Monopeltis 719, 721–722
anchietae 728, 735
capensis 726–728, 735
vanderysti 735
Monopenchelys 486
acuta 483–488
Montastrea 1135
Morelia spilota mcdowelli 330
Morone
americanus 623, 625–626, 628
chrysops 623, 625–626, 628
mississippiensis 623, 625–626, 628
saxatilis 623, 625–626, 628
Moronidae 619–620, 624, 627–628, 902
Muraena
helena 485, 487
retifera 485, 487
Muraenesocidae 486
Muraenidae 483–488, 1099, 1178
Muraeninae 485
Muscidae 956
Mustelus 356–363
antarcticus 356–363
lenticulatus 356–363
sp. A 356–363
sp. B 356–363
Myliobatis
australis 462, 464
californica 462–465
Mylopharodon 668
Myobatrachidae 187
Myobatrachinae 364–373
Myroconger compresus 487
Myrocongridae 486–487
Myron richardsoni 908, 912–913
Myrtaceae 323

Nanatherina balstoni 903
Nannoptopoma 375, 388
spectabilis 342
sternoptychum 343
Nannothrissa
parva 67
stewarti 67
Narcine 137–145
brevilabiata 143
indica 137
maculata 138
oculifera 137–145
rierai 137
sp. 138
sp. nov. D 138
sp. nov. E 143–144
sp. nov. H 143
sp. nov. I 143
Natator depressus 302–312
Natricinae 911
Natrix 907
maura 913
natrix 908, 913
Necturus maculosus 65
Negaprion brevirostris 25–26, 32, 34–35
Nemacheilus smithi 165
Nemadoras
sp. B 343
trimaculatus 343
Nematocharax venustus 431
Nematoda 473
Nematolebias 917
Nematolosa 497–498
Nemertini 473
Nemichthyidae 486
Nemipteridae 618–631
Nemipterus marginatus 623, 625–626, 628
Neodontobutis aurarmus 109
Neoopisthopterus 498, 500–501
tropicus 502
Neoplecostominae 91, 402
Neoplecostomus 91, 403
microps 1069
Neoseps reynoldsi 725, 736
Neosuchia 634
Nerodia 907
cyclopion 908, 913
sipedon 417, 873
Niobichthys 375–376, 388
ferrarisi 387
Nocomis 669, 672–674
micropogon 666, 675
Notemigonus 669, 672–674
crysoleucas 666, 675
Notidanodon 539
Notobatrachus 256
degiustoi 256
Notophthalmus viridescens 466–471, 493–494
Notorynchus cepedianus 25
Notosudidae 564
Nototheniidae 438
Notothenioidei 433–440
Notropis rubellus 1093
Nymphophilus 259
minckleyi 259

Obaichthys 540
Oblada 627
melanura 623, 625–628
Occidozyga laevis 1044
Odaxothrissa 74
vittata 67
Odontobutidae 104, 109
Odontobutis 104–110
aspro 104, 109–110
haifengensis 104, 109–110
hikimius 104–110
interrupta 104, 110
obscura 104–105, 107–108, 110
platycephala 104, 109
potamophila 104, 109–110
wui 104, 110
yaluensis 104, 109–110
Odontognathus 498
compressus 501
equitorialis 501
mucronatus 501
tardoore 501
Odontostilbe
sp. A 342
sp. B 342
Oedemognathus exodon 60
Oedipina 551
Oidiphorus 891
mcallisteri 891
Oligancistrus 87
Oligochaeta 473, 889
Oligosoma suteri 1194
Ophichthidae 483, 486–487, 798
Ophichthus
altipennis 798–799
ocellatus 487
Ophichthys melanochir 798–799
Ophidiiformes 891
Ophisaurus 729
harti 735
ventralis 729
Ophistonema oglinum 502
Opisthonema 497–498
berlangai 564
medirastre 564
oglinum 26, 502
Opisthopterus 496, 498
dovii 501
Opuntia basilaris 1023
Orectolobiformes 24–38
Orectolobus maculatus 25, 35
Oreochromis
mossambicus 886
niloticus 903
Orthodon 669, 672–674
microlepidotum 666, 675
Orthogonikleithrus 534
Orthoptera 948–949, 956
Oscillatoria 1110
Osmeridae 314
Osmerus mordax 502
Ostariophysi 173–179, 428–432, 496–503

Osteoglossomorpha 540
Osteolaemus 634
tetraspis 636
Osteopilus 553
septentrionalis 546
Ostracoda 473
Otocinclus 375, 402, 1063–1069
affinis 1063–1069
bororo 1064, 1067–1069
caxarari 1064, 1067–1069
flexilis 1063–1069
hasemani 1064, 1067–1069
hoppei 1064, 1067–1069
huaroani 1064, 1067–1069
macrospilosus 1064, 1067–1069
mariae 1064, 1067–1069
mura 1064, 1067–1069
orbis 1067
tapirape 1063–1069
vestitus 1064, 1067–1069
vittatus 1064, 1067–1069
xakriaba 1063–1069
Otothyris 375
Oxylapia polli 128
Oxyropsis 374–390
acutirostra 374–390
acutirostris 374, 383
carinata 374–390
carinatum 381
carinatus 381
sp. 384, 1069
wrightiana 374–390
wrightii 377

Pachycalamus 719, 721–722, 724, 729
brevis 723–724, 729, 735
Pachycormiformes 534, 540
Pachydactylus 586–596
austeni 589–591, 593
bibronii 586–596
b. pulitzerae 591
b. stellatus 591
bicolor 593
capensis 589–591, 593
caraculicus 593
fasciatus 589–591, 593
fitzsimonsi 589–591, 593
geitje 589–591, 593
haackei 587, 589–591, 593
kladaroderma 587, 589–591, 593
labialis 589–591, 594
laevigatus 591
l. tessellatus 591
maculatus 589–591, 594
namaquensis 586–596
oshaughnessyi 593
o. katanganus 593
punctatus 589–590, 594
rugosus 589–591, 594
scherzi 593
scutatus 593
tetensis 586–596
tuberculosus 586–596
turneri 589–594
t. laevigatus 592
t. pulitzerae 592
weberi 589–591, 594
Pachymedusa 546
Pachymetopon aeneum 623, 625–626, 628
Pachypanchax 125
Pachyurus sp. 342
Pagellinae 618–631
Pagellus 624, 627
bellotii 623, 625–626, 629
bogaraveo 623, 625–626, 629
Pagrinae 618–631
Pagrus 618–619, 624, 627
auratus 623, 625–627, 629
auriga 623, 625–626, 629
pagrus 623, 625–626, 629
Palaeophis 527
Palatogobius 716
grandoculus 716–718
paradoxus 716–718
Paleoheterodon 528
Pallimnarchus 633–634, 636
Palmaceae 795
Palmatogecko 586, 592
Panaque 87, 402
Pandanus 1060
Pantodon 1172
Papasula abbotti 639
Paracanthopoma cf. *parva* 342
Paracanthopterygii 540
Paracassina 809
Paraclinus 419–427
altivelis 426
arcanus 419–427
fasciatus 419–427
integripinnis 426
marmoratus 419–420, 426
nigripinnis 419–420
rubicundus 419–427
sini 426
spectator 419–427
walkeri 426
Paracyprichromis brieni 1033–1034
Paraepicrates 528
Paragoniates alburnus 343
Paralafystius mcallisteri 891
Paralichthodinae 643
Paralichthyidae 642–652
Paralichthys 649
dentatus 598, 605–607, 646–647, 652
olivaceus 598, 605, 607
Paraliparis 758
Parancistrus 87
Paralepidotus ornatus 540
Paratilapia polleni 128
Pareatinae 911
Pareiorhina rudolphi 1068–1069
Paretroplus 125
dami 128
kieneri 73, 128
maculatus 128
maromandia 128
menarambo 128
nourissati 73, 128

n. sp. 128
petiti 128
polyactis 128
tsimoly 128
Parophrys vetulus 646–647, 651
Parrella 716
Peckoltia 86–87, 90, 1172
Peipiaosteus pani 217
Pellona 496–498
castelnaeana 501
ditchela 501
flavipinnis 501
harroweri 500–501
Pellonula 496–498
afzeliusi 502
leonensis 67
Pellonulinae 67–76, 497
Pellonulini 73–75
Pellonulops 68
Pelobates 180–189
cultripes 181–185, 187
fuscus 187
syriacus 181, 183–185, 187
varaldii 181, 183–185, 187
Pelobatidae 180–189
Pelodiscus 783
sinensis 786
Pelodytes 180–189
caucasicus 187
ibericus 180–181, 183–187
punctatus 187
Pelodytidae 180
Perca 11, 643–644, 649
flavescens 2, 4, 13, 903
fluviatilis 4, 13
sp. 646–647, 652
Perccottus 109
Percichthyidae 898
Percichthyinae 898
Percidae 1–14, 450–455, 643, 652
Perciformes 35, 199–203, 618–631, 643, 652, 897
Percina 1–14
(*Alvordius*) 1–14
antesella 4, 6–8, 10, 12
aurantiaca 2, 4, 6–8, 10–12
aurolineata 4, 6–8, 10, 12
aurora 4, 6–8, 10, 12
austroperca 4, 6–8, 10, 12
brevicauda 4, 6–8, 10, 12
burtoni 4, 6–8, 10, 12
caprodes 4, 6–8, 10, 12, 903, 1107
c. semifasciata 1193
carbonaria 4, 6–8, 10, 12
copelandi 4, 6–8, 10, 12
(*Cottogaster*) 1–14
crassa 4, 6–12
cymatotaenia 4, 6–8, 10, 12
(*Ericosma*) 1–14
evides 4, 6–8, 10–12
gymnocephala 4, 6–8, 10, 12
(*Hadropterus*) 1–14
(*Hypohomus*) 2
(*Imostoma*) 1–14
jenkinsi 4, 6–8, 10, 12
kathae 4, 6–8, 10, 12
lenticula 1, 4, 6–8, 10, 12
macrocephala 4, 6–8, 10–12
macrolepida 4, 6–8, 10, 12
maculata 4, 6–8, 10, 12
manitou 1193
nasuta 4, 6–8, 10, 12
nebulosa 1193
nevisense 4, 6–12
nigrofasciata 4, 6–8, 10, 12
notogramma 4, 6–8, 10, 12
(*Odontopholis*) 1–14
oxyrhynchus 4, 6–8, 10, 12
palmaris 4, 6–8, 10–12
pantherina 4, 6–8, 10, 12
pelatata 4, 6–12
(*Percina*) 1–14
phoxocephala 4, 6–8, 10, 12
rex 4, 6–8, 10, 12
roanoka 1, 4, 6–12, 1107
sciera 4, 6–8, 10, 12
shumardi 4, 6–8, 10, 12
sp. 4, 6–8, 10, 12
squamata 6–8, 10, 12
sticogaster 4, 6–8, 10, 12
(*Swainia*) 1–14
suttkusi 4, 6–8, 10, 12
tanasi 4, 6–8, 10, 12
uranidea 4, 6–8, 10, 12
vigil 4, 6–8, 10, 12
Percoidei 618–631, 897–905
Percomorpha 642
Perlidae 742
Petaurus norfolcensis 329
Petromyzontidae 1172
Petrotilapia 146, 150
Petrus rupestris 623, 625–626, 628
Pfiesteria 249
Phaeognathus 851
hubrichti 851–856
Phagocotus gracilis 445
Phasmatidae 956
Philautus surdus 1044
Philodryas simonsii 134
Pholidophoriformes 540
Pholidophorus bechei 534
Phrynohyas 550
Phrynomerus bifasciatus 555
Phrynosomatidae 857
Phyllobates marchesianus 157
Phyllomedusa 546, 549–550
rohdei 1001
Phyllomedusinae 546
Physalaemus pustulosus 253, 984
Pica nuttalli 21
Pimelodella 337
sp. A 343
sp. B 342
sp. C 343
sp. D 343
sp. E 342
sp. H 343
Pimelodidae 176, 938–942
Pimelodus

cf. *altissimus* 342
cf. *rigidus* 343
Pimephales
notatus 666, 675
promelas 695
Pinus
contorta 1025
elliottii 511
jeffreyi 1023–1024
monophylla 1023–1024
palustris 962
Pisces 473, 755–778, 938–942
Pisodonophis
boro 798
cancrivorus 798
zophistius 798
Pituophis melanoleucus melanoleucus 535
Plagiopsetta glossa 646–647, 651
Plagopterus 665–678
argentissimus 665–666, 675
Plasmodium 39–43
agamae 39, 42
azurophilum 39–43
floridense 39–43
giganteum 39, 42
mexicanum 39, 42
sp. 39–42
Platanichthys 497–498
platana 502
Platessa 605
platessa 605
Platichthys 646
Platygobio gracilis 1109
Platymantis 1044
banahao 1044
corrugatus 1044
dorsalis 1044
indeprensus 1044
isarog 1044
luzonensis 1044
montanus 1044
polillensis 1044
pseudodorsalis 1044
sp. 1044
Plecoptera 583
Plecostomus 402
pellegrini 402
(*Pogonopoma*) 404
wertheimeri 402, 404
Plectranthias 233
exsul 233–238
lamillai 233–238
Plectrohyla 546
glandulosa 547
Plectropus pictus 1037
Plethodon 391, 395
albagula 1194
cinereus 65, 391–401, 865–869
glutinosus 344, 349, 391–401
hoffmani 391–401
hubrichti 391–401
mississippi 349
shenandoah 391–401
Plethodontidae 344–355, 865, 1194
Pleurodeles waltl 245
Pleurodema 246
Pleuronectidae 642–652
Pleuronectiformes 597–609, 642–652
Pleuronectinae 642–643, 651
Pleuronectini 651
Pleuronectoidei 642–652
Pleuronichthys
guttulatus 646–647, 649, 651
verticalis 646–647, 649, 651
Pliosteostoma 498
lutipinnis 501
Podarcis 841
bocagei 209, 212
hispanica 111, 209, 212
muralis 209, 212, 836, 840
m. muralis 836, 841
sicula 836–842
s. campestris 836–842
Podargus
ocellatus 330
strigoides 330
Podocnemis expansa 102
Poecilia reticulata 886, 1113
Poeciliidae 882
Poeciliopsis occidentalis 702
Poecilopsetta 642–652
Poecilopsettinae 642–643
Poecilopsettidae 642–652
Pogonopoma 402–410
obscurum 402–410
parahybae 403–404, 408–409
wertheimeri 402–405, 408–409
Pogonopomoides 402, 404
parahybae 402
Pollia 539
Polyamblyodon germanum 623, 625–626, 628
Polychaeta 473
Polychrotidae 275–286
Polygonum 511
Polyodon 290, 293
spathula 287–289, 296, 298–299, 532
spatula 59
Polyodontidae 287, 1172
Polypedates leucomystax 1044
Polyscias murrayi 328
Polysteganus praeorbitalis 623, 625–626, 628
Pomadasys maculatus 623, 625–626, 628
Pomatomus saltatrix 605, 903
Pomoxis 898, 900–902
annularis 903
nigromaculatus 903
Porcostoma dentata 623, 625–626, 629
Porolithodon pachydermum 1135
Porzana sp. 639
Potamalosa 73
Pothos longipes 323, 329
Prionobrama filigera 342
Pristichampsus 634, 636
Pristigaster 498
cayana 499, 501
whiteheadi 501
Pristigasteroidea 496–503
Pristis pectinata 1190

Pristolepis 1172
Proceratophrys appendiculata 1001
Prochilodus 337
nigricans 342
Proctoporus bolivianus 725, 736
Prodiplocynodon 634
Proeleginops grandeastmanorum 438
Prohalecites 533
Prosopis
alba 795
algarrobilla 795
glandulosa 695
Protopterus aethiopicus 1193
Protoscaphirhynchus 292
Protospinax annectans 539
Psammodromus
algirus 209, 212
hispanicus 209, 212
Psednos 755–778
andriashevi 759–760
anoderkes 757–760, 774–775
balushkini 759
barnardi 759, 761
cathetostomus 757–760, 768–773
christinae 755, 759–760
delawarei 757–760, 773–774
dentatus 756, 758–761, 775
gelatinosus 759–760
griseus 757–760, 771–772
groenlandicus 759, 761
harteli 759, 761
islandicus 756, 758, 760, 763, 767–768, 774
melanocephalus 756, 758, 760, 762–763, 767, 774
mexicanus 756–759, 763–765, 770–772, 776–777
microps 759–760
micruroides 759–760, 763, 774
micrurus 759, 763
mirabilis 759–760, 763, 774
nataliae 759
pallidus 758, 760, 770–771, 773, 775–777
pollidus 757, 759
sargassicus 759–760, 770, 774
sp. 759, 765, 767
sp. 1 755, 758, 760, 765, 767, 775–777
sp. 2 755, 758–760, 776–777
sp. 3 755, 758–760, 776–777
spirohira 755–756, 758, 760, 763, 765–767, 774
steini 759–760, 765
whitleyi 759
Psephenus 259
minckleyi 259
Psephurus 290
gladius 287, 289, 293, 296, 298–299
Psepseudaphritis 438
Psettichthys melanostictus 646–647, 651
Psettodes 646–647, 649
erumei 646–647, 651
Psettodidae 643, 646–647, 651
Psettodoidei 642–652
Pseudacanthicus 87
Pseudacris
regilla 253
triseriata 1174
Pseudaphritidae 434, 438–439
Pseudaphritis 433–434, 437–438
sp. 435
urvillii 433–440
Pseudechidna brummeri 485, 487
porphyriacus 330
Pseudemys 1118–1121
concinna 543, 1118
gorzugi 1118
texana 1118
Pseudidae 546
Pseudis paradoxa 1130
Pseudacsopia japonica 646–647, 652
Pseudocorynopoma heterandria 408
Pseudohemiodon sp. B 343
Pseudolabrus japonicus 903
Pseudoloricaria punctulata 1069
Pseudomyrophis fugesae 1178
Pseudonaja textilis 1100
Pseudooxyrhophiinae 911
Pseudophryne
bibroni 364, 371
bibronii 370
Pseudopleuronectes americanus 605, 646–647, 651
Pseudorinelepis 402, 409
benibarbis 403
genibarbis 402–404, 408–409
Pseudorhombus 649
pentophthalmus 646–647, 652
Pseudoscaphirhynchus 287–301
fedtschenkoi 291
hermanni 288, 290–293, 296, 298–299
kaufmanni 214, 288–293, 296, 298–299
Pseudostegophilus nemurus 343
Pseudotocinclus tietensis 1069
Pseudotothyris obtusus 1069
Pseudotropheus 146–151
cf. *williamsi* 146
elongatus 146–151
fainzilberi 146–151
galanos 147–150
greshakei 150
minutus 150
novemfasciatus 146
socolofi 150
(*Tropheops*) 150
tropheops 146–151
t. tropheops 146
williamsi 146–151
Pseudotylosurus angusticeps 342
Pterengraulis atherinoides 502
Pternohyla 549–550
Pterogymnus laniarius 623, 625–626, 629
Pterois 643–644, 649
sp. 646–647, 652
Pterosphenus 527
Pterygoplichthys 402
Ptychadena 247
Ptychoceratodus 540
philippsi 540
Ptychocheilus 668
Ptychochromis 73, 120–130
cf. *grandidieri* 120–121, 126, 128
grandidieri 120, 126–128
inornatus 120–130

madagascariensis 120, 126
oligacanthus 120, 125–128
o. var. nosibeënsis 120, 126–127
sp. 129
Ptychochromoides 125
betsileanus 120, 129
katria 129
vondrozo 129
Ptychohyla 546, 550, 1167
hypomykter 547
spinipollex 547
Pucapampella 533
Puffinus
cf. *gavia* 639
pacificus 639
Purussaurus neivensis 635
Pycnodontiformes 539
Pygidianops 152, 154
Pygidium
alternum 743
alterum 743, 746
Pygopus 732
Python
molurus 907
reticulatus 1100
Pythonidae 907
Pyxicephalus adspersus 204

Quadrula intermedia 583
Quercus 511
chrysolepis 1024–1025
kelloggii 1023
wislizenii 1023
Quinkana 633–636

Raconda 498
russeliana 501
Ramallichthys 540
Ramonellus 255
Rana 350, 516, 1158
aurora 970
capito 962, 969
cascadae 970
catesbeiana 448, 466–471, 531
clamitans 445–449, 985
cyanophlyctis 870–872
erythraea 970, 1044
esculenta 872, 970
lessonae 970
luzonensis 1044
palmipes 550
palustris 985
perezi 531
pipiens 550
pretiosa 969–970
sevosa 962–972
similis 1044
sylvatica 448, 970
temporaria 372, 748, 872, 969–970
virgatipes 535, 985
vittigera 1044
Ravenala 1060
Reduviidae 956
Regina septemvittata 417
Reinhardtius 649
evermanni 646–647, 651
Reptilia 131–136, 586–596, 632–641, 719–738, 1160, 1163
Reptiliomorpha 254–255
Rhabdolichops 337
caviceps 342
eastwardi 342
Rhabdophis 907
nuchalis 908, 913
Rhabdosargus thorpei 623, 625–626, 629
Rhacodactylus 638
Rhacophorus
appendiculatus 1044
bimaculatus 1044
pardalis 1044
Rhadinaea 528
Rhadinosteus 256
Rhamdia
quelen 938–942
queleni 938
Rheocles derhami 73
Rhincodon typus 25, 36
Rhinelepis 402–410
aspera 402, 409
genibarbis 402
paraguensis 402
parahybae 404, 409
sp. 409
strigosa 402, 409
Rhineura 553, 719, 721–722, 728, 730
floridana 726–728, 735
Rhineuridae 721–722, 728
Rhinichthys 665, 669–674
atratulus 666, 675, 1122–1127
cataractae 1107
Rhinobatos lentiginosus 25
Rhinoclemmys 783
areolata 1118
funerea 785
pulcherrima 1119
punctularia 1118–1119
Rhinophrynus 550
Rhinoplocephalus nigrescens 330
Rhinosardinia 497–498
amazonica 502
Rhombosoleidae 642–643
Rhombosoleinae 642–643
Rhombus 605
Rhoptropella
Rhoptropus 586–596
afer 589–590, 594
barnardi 589–590, 594
biporosus 589–590, 594
boultoni 589–590, 594
bradfieldi 589–590, 594
Rhyacosiredon 160
Rhynchactis 958
Ribes sp. 1025
Rimicola 441–444
brevis 443
cabrilloi 441–444
dimorpha 441–444
eigenmanni 442, 444

muscarum 442–444
sila 441–444
Rivulidae 916–927
Rivulinae 917
Rivulus brasiliensis 917–918, 921, 923–926
Romanichthys valsanicola 4, 13
Rubiesichthys 540

Sacalia bealei 1119
Salamandra 1174
lanzai 229–232
salamandra 230
Salix
nigra 511
sp. 1023, 1025
Salmo salar 605
Samaridae 642–643, 646–647, 651
Samarinae 642–643
Samariscus xenicus 646–647, 651
Sarcopterys stipata 328
Sardina 497–498
pilchardus 502
Sardinella 496–498
albella 502
brasiliensis 502
maderensis 502
marquesensis 564
Sargassum sp. 425
Sarotherodon occidentalis 886
Sarpa 624
salpa 623, 625–626, 628
Sauvagella 67–76
madagascariensis 67–72, 74–75
m. bianalis 71
m. brevidorsalis 68
m. longianalis 68
robusta 67–76
Scaphiopus 180–189
couchii 180–187, 934
holbrookii 181–187
hurterii 187
Scaphirhynchinae 287–301
Scaphirhynchini 287–301
Scaphirhynchus 287–301
albus 214, 287–288, 290, 293, 296, 298–299
fedtschenkoi 287
hermanni 287
kaufmanni 287
platorynchus 287, 290, 293, 296, 298–299
platorhynchus 213–214
suttkusi 213, 287, 290, 293, 296, 298–299
Scarabeidae 956
Sceloporus 857
graciosus 1023
grammicus 858
occidentalis 39, 42, 417
undulatus 827
variabilis 857–858
Schedophilus labyrinthicus 891
Schilbeidae 176
Schizomeria ovata 326, 328–329
Sciaenops ocellatus 605
Scinax 550
boulengeri 985
hiemalis 994–1005
staufferi 1167
Scincella lateralis 535, 725, 736
Scincidae 725, 857
Scirpus
americanus 695
cyperinus 511
olnyi 695
Scleroglossa 731
Scleronema 742
Scobinancistrus 87, 91
Scoloplacidae 177
Scolopsis ciliatus 623, 625–626, 628
Scomber scombrus 903
Scopeloberyx 643–644, 649
robustus 646–647, 652
Scophthalmidae 597–609, 642–652
Scophthalmus 642–652
aquosus 597–609, 646–647, 652
Scorpaenidae 643, 652, 973–978
Scorpaeniformes 652, 755–778, 1193
Scorpaenodes 973
africanus 976
albaiensis 976, 978
arenai 976
caribbaeus 976
corallinus 976, 978
elongatus 976
englerti 976
guamensis 976, 978
hirsutus 976, 978
immaculatus 976
insularis 976
investigatoris 976
kelloggi 976, 978
littoralis 976, 978
minor 976, 978
muciparus 976
parvipinnis 973–978
quadrispinosus 973–978
scaber 976, 978
smithi 976
steenei 976
steinitzi 976, 978
tredecimspinosus 976
tribulosus 976
varispinis 976, 978
xyris 976
Scuticaria tigrina 485, 487, 1099
Sebastes 1193
Sebastipistes cyanostigma 976
Semionotidae 540
Semionotus 540
Semotilus 665, 669, 672–674
atromaculatus 666, 675
Serpentes 1147–1151, 1162
Serranidae 897
Setipinna 496–498, 500–501
melanochir 502
Seymouriamorpha 255
Sibynomorphus vagus 134
Siderastrea 1135
siderea 1135
Sierrathrissa 73–74, 496, 498

Siluriformes 152–156, 173–179, 374–390, 402–410, 739–747, 1006–1015, 1063–1069, 1170
Silvinichthys 742
Simpsonichthyina 917
Simpsonichthys myseri 917–918, 921, 924, 926
Simuliidae 742
Siphateles bicolor 668
Sistrurus 197
miliarius 1194
Sloanea australis 328
Smegmamorpha 899, 902
Smilisca 549–550
baudinii 1166–1167
Snyderichthys 665–678
copei 665–666, 671–673, 675
Solea solea 646–647, 652
Soleidae 642–643, 646–648, 652
Soleinae 643
Sparidae 618–631
Sparidentex hasta 623, 625–628
Sparinae 618–631
Sparodon durbanensis 623, 625–626, 629
Sparoidea 618–631
Spartina alterniflora 816
Sparus auratus 623, 625–626, 629
Spea 180–189
bombifrons 181–184, 186–187
hammondii 181–184, 186–187, 934
intermontana 181–184, 186–187
multiplicata 181–184
(*Scaphiopus*) 934
Spectracanthicus 87, 91
Spermophilus mollis 1085
Sphenocephalidae 540
Sphenodon 1162
punctatus 111
Sphyrna tiburo 25, 34
Spicara 618–631
alta 623, 625–626, 629
maena 623, 625–626, 629
Spinifex sericeus 303
Spondyliosoma 624
cantharus 623, 625–626, 628
Squaliformes 35
Squaloraja 533
Squalus acanthias 25, 34–36, 1190
Squamata 131–136, 208–212, 275–286, 719–738, 792–797, 1070–1077, 1098–1101
Squatina californica 25, 35
Spratelloides 497–498
delicatulus 67, 502
madagascariensis 67
robustus 67
Spratellomorpha 67–76
bianalis 67, 71, 74–75
Stathmonotus 426
Steatornis caripensis 938
Steindachnerina
dobula 342
planiventris 342
Stellio stellio 415–416
Stenotomus 624
chrysops 623, 625–626, 629
Stephanoberyciformes 652
Stereocyclops parkeri 1001
Sternarchorhynchus
curvirostris 60
roseni 60
Sternotherus 783
depressus 542
minor 542, 786
odoratus 786
Stizostedion 11
canadense 4, 13
vitreum 4, 13
Stolephorus 496–498
indicus 499, 502
Stomias 1145
Strophidon sathete 485, 487
Stumpffia
cf. *gimmeli* 1060
gimmeli 1057
pygmaea 1057
tetradactyla 1057
Sturisoma cf. *nigrirostrum* 343
Syacium 647–648
pappillosum 646–647, 652
Symphurinae 643, 652
Symphurus plagiusa 646–647, 652
Symphysanodontidae 564
Symphysanodon berryi 564
Synaphobranchidae 483
Syncarpia glomulifera 322–323, 325, 327–328, 330
Syrrhophus 551
(*Tomodactylus*) 551

Taenioides coecus 788
Taeniopsettinae 643
Tantilla 528
Taraxacum sp. 1023
Tarentola 586–590
mauritanica 587, 594
Taricha granulosa 748–754
Tarphops 649
oligolepis 646–647, 652
Teiidae 552, 1070–1077
Teleostei 120–130, 146–151, 534, 665–678, 687–705, 716–718, 973–978, 1092–1097, 1144–1146
Telmatobius 246
Tenthredinidae 956
Tephrinectes sinensis 642
Teramulus waterloti 125
Termitidae 956
Terrapene 783
carolina 411, 415–417, 786, 1118
coahuila 1118
coahulia 259
ornata 411–418, 786
Testudines 1160, 1162
Testudinidae 785–786, 1119–1120
Testudinoidea 1119
Testudo 783
hermanni 786
Tetragonopterus argenteus 342
Tetraodontiformes 652
Thamnophis 907
couchii 1023
sirtalis 15–23, 477–482, 908, 913

Tharsis 534
Thaumatichtys 1145
Thoracocharax stellatus 342
Thryssa 496, 498
Thymallus thymallus 605
Tiaroga cobitis 702
Tilapia
betsileanus 120
mossambica 201
natalensis 201
zilli 201
Tiliqua adelaidensis 1100
Todirhamphus sancta 326
Tomeurus gracilis 882
Tomistominae 634
Tomodactylus 551
Tongxinichthys 533
Trachelyopterus lucenai 173–179
Trachemys 783, 1118–1121
callirostris 1118
decorata 1118
decussata 1118
dorbigni 785–786, 1118
emolli 1118
gaigeae 1118
scripta 224, 456–461, 504, 507, 543, 785–786, 1118, 1120
s. elegans 1118–1121
s. scripta 1120
s. troostii 1118–1121
stejnegeri 1118
terrapen 1118
venusta 1118
yaquia 1118
Trachinotus carolinus 560
Trachurus
delagoa 564
margaretae 564
trachurus 903
Trachyboa 734
Trachydosaurus rugosus 111
Triadobatrachus 256
Triakidae 356–363
Triakis semifasciata 25, 30–31, 34–36
Triassurus 255
Trichomycteridae 152–156, 739–747
Trichomycterus 739–747
alterum 743
alterus 739–747
areolatus 740, 742
belensis 739–747
boylei 740, 742–743, 746
catamarcensis 742
corduvensis 746
ramosus 740, 742, 746
spegazzinii 746
Trichoptera 583
Triglops 890
Trilophosuchus 633–634, 636
rackhami 636
Trimeresurus albolabris 907
Trimorphodon 528
Trinectes 605, 642–652
maculatus 648, 652
Trionychidae 785–786
Triprion 549–550
Tristaniopsis
collina 323
laurina 323, 328
Triturus 245
cristatus 245, 872
pygmaeus 532
Trochus maculatus 633
Trogonophidae 721–722, 729
Trogonophis 719, 721–722, 724, 729
wiegmanni 723–724, 726–727, 729, 735
Tropidodipsas 134
Tropidophidae 552
Tropidophiidae 907
Tropidophis 553
haetianus 553, 907
jamaicensis 553
Trypauchen 787–791
Trypauchenichthys 787, 790
Tubifex 749–750
Tupinambis 112
nigropunctatus 116
teguixin 111–119, 284
Turbellaria 473
Typha angustifolia 695
Typhlobelus 152, 154
Typhlogobius 790
Typhlops 134, 553
mutilatus 135
sp. 735
Tyttocharax tambopatensis 177

Udina 540
Uma scoparia 415–416
Umbridae 1172
Upsilodus 91
Urechis caupo 462
Uria aalge 21
Urolophus jamaicensis 462
Uromastix aegyptius 111
Uropterygiinae 484–485
Uropterygius
concolor 485, 487
fuscoguttatus 485, 487
macularius 485, 487
marmoratus 1099
polyspilus 1099

Vallisneria
sp. 94
spiralis 98, 101
Vandellia
sp. A 343
sp. B 342
Varanus
exanthematicus 111
komodoensis 162
varius 330
Vejovis 258
minckleyi 259
Veratrum californicum 1025
Verongula gigantea 1135
Vertebrata 949, 957

Vespidae 956
Vieraella 256
Vipera berus 20, 477, 481
Viperidae 843–850

Watcheeria 255
  deltae 254
Watsonulus 534
Wertheimeria 1172
Xantusiidae 208–212

Xenocharax spilurus 502
Xenoderminae 911
Xenodontinae 907
Xenopeltinae 907
Xenopeltis unicolor 907
Xenophidion 134
Xenopus laevis 250, 253, 490, 749
Xenyllion zonensis 540
Xiliphius 339
  melanopterus 336, 343
Xiphias gladius 605
Xiphophorus
  cortezi 1194
  helleri 886
Xystreurys 649
  liolepis 646–647, 652

Zeiidae 643, 652
Zeus 643–644, 649
  faber 646–647, 652
Zingel streber 4, 13
Zygaspis 721–722, 728
  quadrifrons 726–728, 735
Zygonectes
  auroguttatus 227
  rubrifrons 227

Copeia, 2002(4), pp. 1223–1233

SUBJECT INDEX
COPEIA 2002, NOS. 1–4

ACTIVITY, *Desmognathus (monticola, quadramaculatus)* (act. cycles & microhab. rel. to spp. diffs. in diel ptttns. of temp. pref.) 62–66; *Laticauda colubrina* (act. pttns. differ by age & gender) 77–85; *Carettochelys insculpta* (act. & mvmnt. pttns. in dry seas., gender diffs.) 93–103; *Anolis trachyderma* (diurnal, usually in shade) 275–286; *Phaeognathus hubrichti* (diel & seas. activ. pttns., activ. entirely at entrances or just inside burrow) 851–856.

AGE, *Laticauda colubrina* (activ. pttns. & hab. use btwn. land & ocean differ by age) 77–85; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (at metamorph. rel. to ecol. & evol. of diffs. in larval develop. pttns.) 180–189; *Trachemys scripta* (ontogen. change in male ctshp. beh.) 456–461; *Cyclopterus lumpus* (age-rel.chngs. in prey, stom. conts.) 472–476; *Scophthalmus aquosus* (size more consistent than age for ontog. morph. transitions) 597–609; *Apalone ferox* (early male sex. matur.) 779–786; *Etheostoma caeruleum* (comparison of scale & otolith annuli counts for ageing, otolith more consist.) 830–835; *Rana cyanophlyctis* (annual growth rings in tropical frog phalanges) 870–872; *Rana sevosa* (age at sex. matur. much older for females, implics. for maintain. of isol. popn.) 962–972; *Rhinichthys atratulus* (growth rate & age and size at sex. matur. vary w/ urbanization of watershed) 1122–1127.

BEHAVIOR, *Ginglymostoma cirratum* (kinematics of suction feeding in shark) 24–38; *Anolis sabanus* (malaria parasite infection not aff. anole beh.) 39–43; *Colostethus caeruleodactylus* (ctshp., male territor., nesting, paternal care & transport of tdpls.) 44–51; *Desmognathus (monticola, quadramaculatus)* (sympat. spp. differ in diel pttns. of temp. pref.) 62–66; *Laticauda colubrina* (btwn. land & ocean, ctshp., activ. pttns. & thermoreg. differ by age & gender) 77–85; *Tupinambis teguixin* (electromyogr. of bite force & feeding beh.) 111–119; *Aplocheilus lineatus* (detection of diffs. in surface waves by lateral line) 190–194; *Agkistrodon piscivorus* (defensive beh. towards human aggress., biting very unlikely) 195–198; *Chelydra serpentina* (migr. of htchlngs. to water, var. in speed rel. to water loss) 220–226; *Leuresthes tenuis* (temp. aff. htchng. success in terestrial spawning fish) 313–320; *Bryobatrachus nimbus* (mating & nest choice) 364–373; *Plethodon (cinereus, hoffmani)* (interspp. aggress.) 391–401; *Terrapene ornata* (locom. response to slope, substrate & temp.) 411–418; *Trachemys scripta* (ontogen. change in male ctshp. beh.) 456–461; *Rana catesbeiana* (magnetic compass sense in larval orient.) 466–471; *Pachydactylus* (the 8 large-bodied spp.) (integument loss as pred. defence mech. not monophyl.) 586–596; *Scophthalmus aquosus* (size ranges at specific ontog. morph. transitions, corr. w/ beh. & ecol. transitions) 597–609; *Dermochelys coriacea* (nesting, ecol. corrs.) 653–664; *Leiopelma hamiltoni* (response to fecal chem. signals in primitive frog) 679–686; *Gloydius shedaoensis* (defensive beh. towards human aggress. in venomous island snake, striking very unlikely) 843–850; *Phaeognathus hubrichti* (diel & seas. activ. pttns., activ. entirely at entrances or just inside burrow) 851–856; *Plethodon cinereus* (familiarity reduces aggress. btwn. females) 865–869; *Mabuya margaritifer* (foraging beh., home range size, male territor., spacial rels.) 943–957; *Bufo fowleri* (indiv. var. in calling effort & chorus tenure rel. to body size, body temp. & mating success) 979–987; *Scinax hiemalis* (factors influencing anti-pred. beh.) 994–1005; *Batrachoseps robustus* n. sp. (pred. defense) 1016–1028; *Cyprichromis zonatus* n. sp. (mixed-spp. schooling, male territor., female mouth brooding) 1029–1036; *Kaloula walteri* n. sp. (calling, pred. escape) 1037–1051; *Laticauda* spp., Muraenidae, Congridae (3 spp. of W. Pacific sea kraits much better at catching many eel spp. than humans are, live kraits excellent bioassay method for eels) 1098–1101; *Lepomis (microlophus, megalotis)* (*Lepomis* males steal fertil. from conspecific nesting males, leads to hybrid. in multi-spp. nesting colonies) 1102–1105; *Gambusia affinis* (pheromones from females at diff. stages of reprod. cycle prod. diff. male sex. behs.) 1113–1117; *Leptodactylus podicipinus* (male nest-making, female parental care) 1128–1133; *Gigantactis* sp. (upside-down swimming beh. in deep sea fish) 1144–1146.

BIOGEOGRAPHY, *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (evol. of larval develop. pttns. rel. to biogeogr. of spadefoot toads) 180–189; *Salamandra lanzai* (no diversity in mtDNA cyt b for all popns., rel. to post-Pleist. recolonization) 229–232; Acipenseridae (4 gen., 23 spp.) (clad. anal., mtDNA data, paraphyly w/in family, rels. not correspond to apparent biogeogr.) 287–301; *Desmognathus (f. fuscus, f. conanti)* (of Cumberland & Tenn. Rivers rel. to speciation in salamanders & other animals) 344–355; *Pogonopoma (obscurum* n. sp., *wertheimeri, Pogonopomoides parahybae = Pogonopoma parahybae), Rhinelepis (3 spp.), Pseudorinelepis genibarbis* (biogeogr. implics. of clad. anal. of *Rhinelepis* group w/ n. sp.) 402–410; *Etheostoma tetrazonum* (clad. anal. of popns., biogeogr. implics.) 450–455; *Pachydactylus* (the 8 large-bodied spp. & 9 other spp.) (large mtDNA diffs. imply ancient divisions in genus, long S. African hist.) 586–596; Sparidae (6 subfamilies, all 33 gen., 40 spp.) (rel. to phyl. anal., mtDNA data) 618–631; *Mekosuchus kalpokasi* n. sp. (fossil) (of extinct Mekosuchine crocodiles in Oceania) 632–641; Plagopterini (*Lepidomeda, Meda, Plagopterus,* & incl. *Snyderichthys*) (clad. anal. used in biogeogr. hypoths.) 665–678; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* (factors in origins of these spp. in W. Africa) 800–814.

BLOOD, *Anolis sabanus* (low virulence of 3 spp. of

malaria parasites) 39–43; Emydidae (hemoglobin vars., clad. implics., evid. genus *Clemmys* not monophyl.) 1118–1121.

CALLS, *Colostethus caeruleodactylus* (advert. & ctshp. calls differ, rel. to ctshp. beh.) 44–51; *Colostethus marchesianus* n. sp. (vocs. recorded, compare to distant conspecifics & other congeners) 157–165; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* (sonagrams, calling sites) 800–814; *Bufo fowleri* (correl. of calling effort w/ body size, growth rate, body temp. & chorus tenure) 979–987; *Kaloula walteri* n. sp. (calling microhab., chorus aggregs., call timing, sonagrams, distinct from close rels.) 1037–1051; *Mantidactylus madinika* n. sp. (one male "chirped feebly") 1057–1062.

CHROMOSOMES, *Leiopelma archeyi* (w/in sp. polymorph. of sex chromosomes) 204–207.

CIRCANNUAL RHYTHMS, *Myliobatis californica* (reduced salin. stresses rays, could be cause of migr. out of bays) 462–465; *Menticirrhus saxatilis* (timing of young-of-yr. use of estuary & ocean beach habs.) 815–823.

COLONIZATION, *Salamandra lanzai* (no diversity in mtDNA cyt b for all popns., rel. to post-Pleist. recolonization) 229–232.

COLORATION, *Percina* (all 40 spp. plus 8 other Percid genera) (many breeding color. char. changes w/in *Percina* in clad. anal.) 1–14; *Sauvagella (robusta* n. sp., *madagascariensis)* (descript.) 67–76; *Hypancistrus (inspector* n. sp., *zebra)* (diagn. diff. btwn. spp.) 86–92; *Odontobutis hikimius* n. sp. (fresh & preserved) 104–110; *Ptychochromis inornatus* n. sp. (fresh & preserved) 120–130; *Leptotyphlops (tesselatus* sp. group: *alfredschmidti* n. sp., *teaguei, tricolor)* (descr.) 131–136; *Narcine oculifera* n. sp. (disting. sp.) 137–145; *Pseudotropheus galanos* n. sp. (descr.) 146–151; *Listrura tetraradiata* n. sp. (preserved) 152–156; *Colostethus marchesianus* n. sp. (in life & preserved) 157–165; *Cichlasoma nigrofasciatum* (ontogeny of color pttn.) 199–203; *Hyphessobrycon heliacus* n. sp. (preserved & in life) 428–432; *Thamnophis sirtalis* (thermal advantage to melanism only w/ large body size) 477–482; *Cyprinodon (pisteri* n. sp., *albivelis* n. sp., *arcuatus* n. sp.) (descript., diagn.) 687–705; *Trichomycterus (belensis* n. sp., *alterus)* (descript.) 739–747; *Taricha granulosa, Ambystoma (gracile, macrodactylum)* (skin darkening from UV-B expos., no protect. eff. of dark skin to UV-B expos., larval salamanders) 748–754; *Ophichthys melanochir* = *Ophichthus altipennis* (ontogen. change) 798–799; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* (descript., all spotted) 800–814; *Rhamdia quelen* (depigmented cave popn. replaced by pigmented conspecifics) 938–942; *Scorpaenodes (quadrispinosus* n. sp., *parvipinnis)* (fresh & preserved, color diagn.) 973–978; *Characidium stigmosum* n. sp. (preserved, diagn.) 988–993; *Cnemidophorus abaetensis* n.sp. (in life & preserved, diagn.) 1070–1077; *Apostolepis sanctaeritae* (key to spp. rel. to *A. sanctaeritae* with sim. color pttn.) 1147–1151.

COMPETITION, *Plethodon (cinereus, hoffmani)* (char. displcmt. & interspp. aggress. in sympatry) 391–401; *Ambystoma (opacum, talpoideum)* (eff. of early-htchng. *A. opacum* on later-htchng. *A. talpoideum*) 511–517; *Rhamdia quelen* (non-cave conspecifics replace cave popn. due to compet., not hybrid.) 938–942; *Bufo fowleri* (dense chorusing reduces female mate choice based on indiv. calling effort) 979–987; *Lepomis (microlophus, megalotis)* (*Lepomis* males steal fertil. from conspecific nesting males, leads to hybrid. in multi-spp. nesting colonies) 1102–1105.

CONSERVATION, Large-river fishes (fish community data for conserv. info., deep-water & beach habs. have 92% dissim. spp.) 333–343; *Etheostoma nianguae* (ecol. factors in site suitability for endngrd. sp.) 573–585; *Cyprinodon pisteri* n. sp. (human hab. impacts) 687–705; *Apalone ferox* (commercially harvested, spermatogen, cycle import. to mngmnt.) 779–786; *Phaeognathus hubrichti* (activ. cycles, specific environ., mngmt. recomms.) 851–856; *Rana sevosa* (high adult mortal. in isol. popn., years of reprod. failure common, extinct. of sp. likely w/out recovery plan & action soon) 962–972; *Crocodylus moreletii* (popn. gens., high gen. heterogen. w/in popns., evid. for migr. btwn. popns., implics. for mngmt. of endngrd. sp.) 1078–1091.

DENTITION, *Colostethus (marchesianus, caeruleodactylus)* (tdpl. toothrows disting. closely-rel. spp.) 166–172; *Rimicola (cabrilloi* n. sp., & all 4 other spp.) (strong sex. dimorph. of n. sp. shared w/ 2 congeners) 441–444; *Mekosuchus kalpokasi* n. sp. (fossil) (on maxilla) 632–641; *Psednos* (10 n. spp. & 3 spp. partially described) (often diagnostic) 755–778.

DEVELOPMENT, *Colostethus caeruleodactylus* (of tdpls. in nests, dev. arrested at stage 25 until forest floods) 44–51; *Apteronotus anas* = *A. hasemani* (extreme hypertrophy of male snout causes nomen. confusion) 52–61; *Narcine oculifera* n. sp. (descript. of fetuses) 137–145; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (var. in pttns. of dev. rel. to phylog., data from lab reared tdpls.) 180–189; *Cichlasoma nigrofasciatum* (ontogeny of color pttn.) 199–203; Lacertidae (5 genera, 12 spp.) (possible rel. of trunk intercentra to paedomorph.) 208–212; *Acipenser (brevirostrum, oxyrinchus)* (ontog. of rostral canal bones, spp. diffs.) 213–219; *Bryobatrachus nimbus* (lab study of low desicc. toler. in frog embryos, terrest. nests, extremely slow devel.) 364–373; *Rana clamitans* (embryo. dev. var. in resp. to presence of predator, not predation itself) 445–449; *Cyclopterus lumpus* (ontog. chngs. in prey, stom. conts.) 472–476; *Ambystoma opacum* (eff. on larval body size & surv. to metamorph. of time diff. in htchng.: advantage in early htchng.) 511–517; *Scophthalmus aquosus* (size ranges at specific ontog. morph. transitions, corr. w/ beh. & ecol. transitions) 597–609; *Crinia georgiana* (coevol. of devel. plastic. & large eggs in frog, cues involved in accell. dev.) 928–937.

DIGESTION, *Laticauda colubrina* (prey capture in ocean, digest on land) 77–85.

DISTRIBUTION, *Sauvagella (robusta* n. sp., *madagas-*

cariensis), Spratellomorpha bianalis (within Madagascar), *Gilchristella aestruarius*) (does not occur in Madagascar) 67–76; *Hypancistrus inspector* n. sp. 86–92; *Ptychochromis inornatus* n. sp. 120–130; *Leptotyphlops (tesselatus* sp. group: *alfredschmidti* n. sp., *teaguei, tricolor)* 131–136; *Colostethus marchesianus* n. sp. (morph., color. & vocs. evid. that popns. distant from type local. not conspecific) 157–165; *Salamandra lanzai* (very narrow distrib., no diversity in mtDNA cyt b for all popns.) 229–232; *Desmognathus (f. fuscus, f. conanti)* (parapatry of subspp., evid. for sp. status, other popns. possible sp. status) 344–355; *Mustelus (antarcticus,* sp. A, sp. B) 356–363; *Oxyropsis (wrightiana, carinata, acutirostra)* 374–390; *Plethodon (cinereus, hoffmani)* (char. displcmt. & interspp. aggress. in possible distrib. chngs. due to compet.) 391–401; *Pogonopoma (obscurum* n. sp., *wertheimeri, Pogonopomoides parahybae = Pogonopoma parahybae), Rhinelepis (3 spp.), Pseudorinelepis genibarbis* (of entire *Rhinelepis* group, biogeogr. implics.) 402–410; *Paraclinus (arcanus* n.sp., *spectator* n.sp., *rubicundus)* 419–427; *Etheostoma tetrazonum* (of popns.) 450–455; *Etheostoma nianguae* (distrib. of endngrd. sp. rel. to hab. variables at 3 spacial scales) 573–585; Plagopterini (*Lepidomeda, Meda, Plagopterus,* & incl. *Snyderichthys*) (restricted & reduced distr., endngrd. spp.) 665–678; *Cyprinodon (pisteri* n. sp., *albivelis* n. sp., *arcuatus* n. sp.) (present dist. of *C. pisteri* & *C. albivelis,* recent distr. of extinct *C. arcuatus*) 687–705; *Trichomycterus (belensis* n. sp., *alterus)* 739–747; *Psednos* (10 n. spp. & 3 spp. partially described) (based on few specimens) 755–778; *Karsten* n. gen. *totoyensis* (widely separated specimens) 787–791; *Amphisbaena hiata* n. sp. (known & theorized) 792–797; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* 800–814; *Podarcis sicula campestris* (poor freeze- toler. of introduced lizard, limits range spread) 836–842; *Scorpaenodes quadrispinosus* n. sp. (probably will be extended by ident. of n. sp. in collections of *S. parvipinnis*) 973–978; *Characidium stigmosum* n. sp. (limited) 988–993; *Corydoras difluviatilis* n. sp. (limited) 1006–1015; *Batrachoseps robustus* n. sp. (no sympatric congeners except possibly *B. relictus*) 1016–1028; *Cyprichromis zonatus* n. sp. (limited, conspecifics syntopic) 1029–1036; *Kaloula walteri* n. sp. (limited, sympat. anurans listed) 1037–1051; *Astyanax paris* n. sp. (limited) 1052–1056; *Mantidactylus madinika* n. sp. 1057–1062; *Otocinclus tapirape* n. sp. (limited, sympat. w/ *O. vittatus*) 1063–1069; *Cnemidophorus abaetensis* n. sp. (sympat. w/ close rel. *C. ocellifer*) 1070–1077.

ECOLOGY, *Thamnophis sirtalis* (ecol. var. correl. w/ var. in rates of mult. paternity of litters) 15–23; *Laticauda colubrina* (age & gender diffs. in use of land & ocean habitats) 77–85; *Carettochelys insculpta* (extreme wet-dry seas. diffs., huge dry seas. home ranges, gender diffs.) 93–103; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (ecol. rel. to diffs. in larval develop. pttns. & phylog.) 180–189; *Anolis trachyderma* (compare ecol. of 3 mainland popns., all very similar despite morph. diffs. btwn. popns., no evid. of ecomorphs) 275–286; *Hoplocephalus stephensii* (microhab. of arboreal snakes) 321–332; Large-river fishes (compare fish assemblgs. btwn. deep water & beach habs. of river, 92% dissim. spp.) 333–343; *Cyclopterus lumpus* (feeding ecol. of juvs., ontogen. chngs.) 472–476; *Ambystoma (opacum, talpoideum)* (eff. of tempor. pond-filling time on body size & surv. to metamorph. in *A. opacum,* & pred. by early htchng. *A. opacum* on late htchng. *A. talpoideum*) 511–517; *Etheostoma nianguae* (distrib. of endngrd. sp. rel. to hab. variables at 3 spacial scales) 573–585; *Scophthalmus aquosus* (size ranges at specific ontog. morph. transitions, corr. w/ beh. & ecol. transitions) 597–609; *Dermochelys coriacea* (nest. ecol. in Costa Rica, severe popn. decline) 653–664; *Trichomycterus (belensis* n. sp., *alterus)* (notes) 739–747; *Karsten* n. gen. *totoyensis* (notes) 787–791; *Rhamdia quelen* (natural ecol. replcmt. of cave popn. w/ non-cave conspecifics) 938–942; *Mabuya margaritifer* (microhab. use, foraging beh., diet, sex. dimorph. rel. to male territor.) 943–957; *Rana sevosa* (yr. to yr. popn. struct. fluct., low adult surv., years of reprod. failure common, sp. extremely endngrd.) 962–972; *Cyprichromis zonatus* n. sp. (hab., mixed-spp. school. beh., reprod.) 1029–1036; *Cnemidophorus abaetensis* n. sp. (diurnal, body temps., stom. conts., clutch size) 1070–1077; fishes & herps (eff. of formalin on C, N & S isotope values very slight, therefore these values can be used to determ. historic nutrient flow & food web struct. using museum specimens) 1106–1112; *Rhinichthys atratulus* (growth rate & age and size at sex. matur. vary w/ urbanization of watershed) 1122–1127.

EGGS, *Leuresthes tenuis* (incub. dur. & htchng. success rel. to temp. in terestrial spawning fish) 313–320; *Bryobatrachus nimbus* (water uptake in newly laid frog eggs in terrest. nests, lab study of low desicc. toler. in embryos) 364–373; *Chelydra serpentina* (htchlngs. from wet-incub. eggs larger at htchng. but have less yolk for overwintering) 504–510; *Dermochelys coriacea* (# in nests rel. to female size) 653–664; *Chelydra serpentina* (thermal conductiv. of incub. medium aff. egg water exchange) 706–715; *Crinia georgiana* (coevol. of devel. plastic. & large eggs in frog) 928–937; *Leptodactylus podicipinus* (in foam nests on water in male-constructed basins close to stream edge) 1128–1133.

ENDANGERED SPECIES, *Salamandra lanzai* (no diversity in mtDNA cyt b for all popns., rel. to post-Pleist. recolonization) 229–232; *Etheostoma nianguae* (ecol. factors in site suitability for endngrd. sp.) 573–585; *Chelonia mydas* (growth rates in wild W. Mex. turtles, differ from other wild growth rate studies) 610–617; *Dermochelys coriacea* (nest. ecol. in Costa Rica, severe popn. decline) 653–664; Plagopterini (*Lepidomeda, Meda, Plagopterus,* & incl. *Snyderichthys*) (biogeogr. rel. to speciation, mtDNA data) 665–678; *Leiopelma hamiltoni* (response to fecal chem. signals in primitive frog) 679–686; *Cyprinodon (pisteri* n. sp., *arcuatus* n. sp.) (human impact: reduced distrib. in *C. pisteri, C.*

arcuatus recently extinct) 687–705; *Phaeognathus hubrichti* (diel & seas. activ. pttns., activ. entirely at entrances or just inside burrow) 851–856; *Rana sevosa* (high adult mortal. in isol. popn., years of reprod. failure common, sp. in extreme danger of extinc.) 962–972; *Crocodylus moreletii* (popn. gens., high gen. heterogen. w/in popns., evid. for migr. btwn. popns., implics. for mngmt. of endngrd. sp.) 1078–1091.

EVOLUTION, *Ginglymostoma cirratum* (mult. evol. origins of suction feeding in sharks, adapts. sim. in teleosts) 24–38; *Laticauda colubrina* (study of sea kraits can elucidate evol. of hab. shift from land to sea) 77–85; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (of pttns. of develop. in spadefoot toads) 180–189; *Leiopelma archeyi* (early evol. stage of dev. of sex chromosomes, w/in sp. polymorph. in prim. frog) 204–207; *Plethodon (cinereus, hoffmani)* (char. displcmt. in body size & head morph. in sympatry, rel. to interspp. aggress.) 391–401; Plagopterini (*Lepidomeda, Meda, Plagopterus,* & incl. *Snyderichthys*) (clad. anal. w/ mtDNA data, biogeogr. implics. leads to hypoths. of factors important in speciation) 665–678; Amphisbaenia (4 fams., all 23 extant gen., 32 spp.) (limb loss, descript. of appendic. skel., compare w/in Amphisbaenia & with other limbless squamates) 719–738; Colubridae (subfam. Homalopsinae [14 spp.], 6 non-homalopsin spp.) (phyl. anal. suggests salt toler. & crustacean-eating evolved mult. times) 906–915; *Crinia georgiana* (coevol. of devel. plastic. & large eggs in frog) 928–937.

EXTINCTION, *Mekosuchus kalpokasi* n. sp. (island fossil, extinct. contemp. w/ human arrival) 632–641; *Cyprinodon arcuatus* n. sp. (human-rel. recent extinct.) 687–705; *Rana sevosa* (high adult mortal. in isol. popn., years of reprod. failure common, extinct. of sp. likely w/out recovery plan & action soon) 962–972.

FEEDING, *Ginglymostoma cirratum* (kinematics of suction feeding in shark, sim. to teleosts) 24–38; *Tupinambis teguixin* (electromyogr. of bite force & feeding beh.) 111–119; Colubridae (subfam. Homalopsinae [14 spp.], 6 non-homalopsin spp.) (phyl. anal. suggests crustacean-eating evolved mult. times) 906–915; *Mabuya margaritifer* (foraging mode) 943–957; *Corydoras difluviatilis* n. sp. (foraging mode) 1006–1015.

FOOD, *Hypancistrus inspector* n. sp. (stom. conts.) 86–92; *Ptychochromis inornatus* n. sp. (stom. conts.) 120–130; *Listrura tetraradiata* n. sp. (stom. conts. notes) 152–156; *Anolis trachyderma* (prey type & amount, popn. diffs. rel. to prey avail. diffs.) 275–286; *Plethodon (cinereus, hoffmani)* (char. displcmt. from competit. for food in sympatry) 391–401; *Cyclopterus lumpus* (diet during first year, ontogen. chngs., stom. conts.) 472–476; *Trichomycterus (belensis* n. sp., *alterus)* (stom. conts.) 739–747; *Mabuya margaritifer* (stom. conts., no gender diffs., consume toxic millipedes) 943–957; *Corydoras difluviatilis* n. sp. (stom. conts., foraging mode) 1006–1015.

GENETICS, *Salamandra lanzai* (no diversity in mtDNA cyt b for all popns.) 229–232; *Crocodylus moreletii* (popn. gens., high gen. heterogen. w/in popns., evid. for migr. btwn. popns., microsat. DNA data) 1078–1091.

GEOGRAPHIC LOCALITIES,

Alabama, *Scaphirhynchus suttkusi* 287–301; *Desmognathus fuscus conanti* 344–355; *Phaeognathus hubrichti* 851–856; *Hybopsis (winchelli,* sp. cf. *winchelli)* 1092–1097.

Aral Sea, *Acipenser nudiventris* 287–301.

Argentina, *Trichomycterus (belensis* n. sp., *alterus)* 739–747; *Amphisbaena (hiata* n. sp., *dubia, darwini heterozonata)* 792–797; *Astyanax paris* n. sp. 1052–1056.

Arizona, *Scaphiopus couchii, Spea (multiplicata, bombifrons)* 180–189; *Lepidomeda (mollispinus, vitatta), Meda fulgida, Plagopterus argentissimus* 665–678; *Cyprinodon arcuatus* n. sp. (recently extinct) 687–705; *Gambusia affinis* 1113–1117.

Atlantic Ocean, *Psednos (islandicus* n. sp., *melanocephalus* n. sp., *spirohira* n. sp., *delawarei* n. sp.) (N) 755–778; *Gigantactis longicauda* n.sp. (NW) 958–961.

Australia, *Carettochelys insculpta* (NT) 93–103; *Natator depressus* (QLD) 302–312; *Hoplocephalus stephensii* (NSW) 321–332; *Mustelus (antarcticus [WA, SA, VIC, NSW, QLD, TAS],* sp. A [WA], sp. B [WA]) 356–363; *Bryobatrachus nimbus* (TAS) 364–373; *Halaphritis* n. gen. *platycephala* n. sp. (TAS, VIC) 433–440; *Ophichthys melanochir = Ophichthus altipennis* (NT, QLD) 798–799; *Crinia georgiana* (WA) 928–937.

Bahamas, *Elacatinus pallens* 1134–1136.

Belize, *Crocodylus moreletii* 1078–1091.

Black Sea, *Huso huso* 287–301.

Brazil, *Colostethus caeruleodactylus* 44–51; *Apteronotus anas = A. hasemani* 52–61; *Hypancistrus zebra 86–92; Listrura tetraradiata* n. sp. 152–156; *Colostethus marchesianus* n. sp. 157–165; *Colostethus (marchesianus, caeruleodactylus)* 166–172; *Trachelyopterus lucenai* 173–179; *Anolis trachyderma* 275–286; *Oxyropsis (wrightiana, carinata, acutirostra)* 374–390; *Pogonopoma (obscurum* n. sp., *wertheimeri, Pogonopomoides parahybae = Pogonopoma parahybae), Rhinelepis (3 spp.), Pseudorinelepis genibarbis* 402–410; *Paraclinus (arcanus* n.sp., *spectator* n.sp., *rubicundus)* 419–427; *Hyphessobrycon heliacus* n. sp. 428–432; *Mabuya agilis* 857–864; *Characidium stigmosum* n. sp. 988–993; *Scinax hiemalis* 994–1005; *Corydoras difluviatilis* n. sp. 1006–1015; *Otocinclus tapirape* n. sp. 1063–1069; *Cnemidophorus abaetensis* n.sp. 1070–1077; *Leptodactylus podicipinus* 1128–1133; *Apostolepis sanctaeritae* 1147–1151.

California, *Spea (hammondii, intermontana)* 180–189; *Leuresthes tenuis* 313–320; *Rimicola cabrilloi* n. sp. 441–444; *Myliobatis californica* 462–465; *Batrachoseps (robustus* n. sp., *campi, wrighti)* 1016–1028.

Canada, *Thamnophis sirtalis* (Brit. Col) 15–23; *Rana clamitans* (Ont.) 445–449.

Caribbean Sea, *Platogobius grandoculus* n. sp. (W) 716–718.

Caspian Sea, *Acipenser persicus* 287–301.

Chesapeake Bay, *Cynoscion regalis, Micropogonias undulatus, Leiostomus xanthurus* 1137–1143.
Chile, *Plectranthias lamillai* = *P. exsul* 233–238.
China, *Odontobutis (obscura, yalvensis, haifengensis, potamophila)* 104–110; *Acipenser sinensis* 287–301; *Gloydius shedaoensis* 843–850.
Colombia, *Oxyropsis (wrightiana, acutirostra)* 374–390.
Costa Rica, *Dermochelys coriacea* 653–664.
Ecuador, *Anolis trachyderma* 275–286; Large-river fishes 333–343.
Figi, *Laticauda colubrina* 77–85; *Karsten* n. gen. *totoyensis* 787–791; *Scorpaenodes (quadrispinosus* n. sp., *parvipinnis)* 973–978.
Florida, *Ginglymostoma cirratum* 24–38; *Apalone ferox* 779–786.
France, *Salamandra lanzai* 229–232; *Acipenser sturio* 287–301.
Georgia, *Hybopsis (lineapunctata, rubrifrons)* 1092–1097.
Ghana, *Kassina arboricola* 800–814.
Grand Cayman, *Elacatinus (gemmatus, pallens, dilepis)* 1134–1136.
Guinea, *Kassina (schioetzi* n. sp., *cochranae)* 800–814.
Gulf of Aden, *Narcine oculifera* n. sp. 137–145.
Gulf of California, *Chelonia mydas* 610–617.
Gulf of Oman, *Narcine oculifera* n. sp. 137–145.
Iceland, *Cyclopterus lumpus* 472–476.
Idaho, *Snyderichthys copei* 665–678.
Illinois, *Chelydra serpentina* 220–226; *Lepomis (microlophus, megalotis)* 1102–1105.
India, *Aplocheilus lineatus* 190–194; *Rana cyanophlyctis* 870–872.
Indian Ocean, *Narcine oculifera* n. sp. (Gulfs of Aden & Oman) 137–145.
Indiana, *Rana catesbeiana* 466–471; *Ambystoma texanum* 824–829.
Indonesia, *Karsten* n. gen. *totoyensis* (Sumabawa) 787–791; *Ophichthys melanochir* = *Ophichthus altipennis* (Sulawesi, Ambon) 798–799.
Iowa, *Chelydra serpentina* 706–715.
Iran, *Acipenser persicus* 287–301.
Italy, *Salamandra lanzai* 229–232; *Acipenser naccarii* 287–301.
Ivory Coast, *Kassina (schioetzi* n. sp., *arboricola, cochranae)* 800–814.
Jamaica, *Elacatinus (pallens, dilepis)* 1134–1136.
Japan, *Odontobutis hikimius* n. sp. 104–110.
Kentucky, *Desmognathus (f. fuscus, f. conanti)* 344–355.
Korea, *Odontobutis (platycephala, interrupta)* 104–110.
Lake Malawi, *Pseudotropheus galanos* n. sp. 146–151.
Lake Tanganyika, *Cyprichromis zonatus* n. sp. 1029–1036.
Liberia, *Kassina cochranae* 800–814.
Louisiana, *Hybopsis amnis* 1092–1097.
Madagascar, *Sauvagella (robusta* n. sp., *madagascariensis), Spratellomorpha bianalis* 67–76; *Ptychochromis inornatus* n. sp. 120–130; *Mantidactylus madinika* n. sp. 1057–1062.
Malawi, *Pseudotropheus galanos* n. sp. 146–151.
Malaysia, *Ophichthys melanochir* = *Ophichthus altipennis* (Malaya) 798–799.
Marshall Is., *Ophichthys melanochir* = *Ophichthus altipennis* 798–799; *Scorpaenodes (quadrispinosus* n. sp., *parvipinnis)* 973–978.
Maryland, *Rhinichthys atratulus* 1122–1127.
Massachusetts, *Acipenser brevirostrum* 287–301.
Mexico, *Chelonia mydas* (Gulf of Cal.) 610–617; *Cyprinodon (pisteri* n. sp. [Chih.], *albivelis* n. sp. [Chih.], *arcuatus* n. sp. [Son., recently extinct]) 687–705; *Platogobius grandoculus* n. sp. (Quin. Roo) 716–718.
Michigan, *Chelydra serpentina* 504–510.
Mississippi, *Acipenser oxyrhinchus desotoi* 287–301; *Desmognathus fuscus conanti* 344–355; *Trachemys scripta* 456–461; *Rana sevosa* 962–972.
Missouri, *Etheostoma tetrazonum* 450–455; *Etheostoma nianguae* 573–585; *Etheostoma caeruleum* 830–835.
Montana, *Scaphirhynchus (albus, platorynchus)* 287–301.
Morocco, *Pelobates varaldii* 180–189.
Namibia, *Pachydactylus (fasciatus, fitzsimonsi, haackei, punctatus, rugosus), Rhoptropus (afer, barnardi, biporosus, boultoni, bradfieldi)* 586–596.
Nebraska, *Terrapene ornata* 411–418.
Netherlands Antilles, *Anolis sabanus* 39–43.
Nevada, *Lepidomeda (albivallis, mollispinus)* 665–678.
New Jersey, *Scophthalmus aquosus* 597–609; *Menticirrhus saxatilis* 815–823; *Bufo fowleri* 979–987.
New Mexico, *Meda fulgida* 665–678.
New York, *Podarcis sicula campestris* 836–842.
New Zealand, *Leiopelma archeyi* 204–207; *Mustelus lenticulatus* 356–363; *Leiopelma hamiltoni* 679–686.
North Carolina, *Desmognathus f. fuscus* 344–355; *Hybopsis hypsinotus* 1092–1097.
Ohio, *Desmognathus f. fuscus* 344–355; *Thamnophis sirtalis* 477–482.
Oman, *Narcine oculifera* n. sp. (Gulf of Oman) 137–145.
Oregon, *Acipenser (medirostris, transmontanus)* 287–301; *Taricha granulosa, Ambystoma (gracile, macrodactylum)* 748–754.
Pacific Ocean, *Plectranthias lamillai* = *P. exsul* (S) 233–238; *Psednos* (E. Pac.:*[cathetostomus* n. sp., *griseus* n. sp., *mexicanus* n. sp., *pallidus* n. sp., *anoderkes* n. sp., *dentatus* n. sp., sp. 1], S. Pac.:[sp. 2, sp. 3]) 755–778; *Laticauda* spp., Muraenidae, Congridae (W) 1098–1101; *Gigantactis* sp. (N) 1144–1146.
Papua New Guinea, *Ophichthys melanochir* = *Ophichthus altipennis* 798–799.
Pennsylvania, *Desmognathus f. fuscus* 344–355; *Plethodon (cinereus, hoffmani)* 391–401.
Peru, *Leptotyphlops (tesselatus* sp. group: *alfredschmidti* n. sp., *teaguei, tricolor)* 131–136; *Oxyropsis (wrightiana, carinata)* 374–390.
Philippines, *Karsten* n. gen. *totoyensis* 787–791; *Ophichthys melanochir* = *Ophichthus altipennis* 798–799; *Kaloula walteri* n. sp. 1037–1051.
Romania, *Acipenser (gueldenstaedtii, stellatus), Huso huso* 287–301.
Russia, *Acipenser (mikadoi* [Tunmin R.], *ruthenus* [Volga R.], *schrenkii* [Sib.]), *Huso dauricus* (Sib.) 287–301.
Sierra Leone, *Kassina cochranae* 800–814.
Society Is., *Ophichthys melanochir* = *Ophichthus altipennis* 798–799.

Somalia, *Narcine oculifera* n. sp. (Gulf of Aden) 137–145.
South Africa, *Pachydactylus (austeni, bibronii, capensis, geitje, haackei, kladaroderma, labialis, maculatus, namaquensis, rugosus, turneri, weberi)* 586–596; *Mabuya margaritifer* 943–957.
South Carolina, *Agkistrodon piscivorus* 195–198; *Desmognathus fuscus conanti* 344–355; *Ambystoma talpoideum* 489–495; *Ambystoma (opacum, talpoideum)* 511–517.
Spain, *Pelobates cultripes, Pelodytes ibericus* 180–189; *Pseudoscaphirhynchus (hermanni, kaufmanni)* 287–301.
Tennessee, *Desmognathus (monticola, quadramaculatus)* 62–66; *Desmognathus (f. fuscus, f. conanti)* 344–355; *Hybopsis amblops* 1092–1097.
Trinidad, *Rhamdia quelen* 938–942.
Turkey, *Pelobates syriacus* 180–189.
Turkmenistan, *Pseudoscaphirhynchus (hermanni, kaufmanni)* 287–301.
Utah, *Plagopterus argentissimus, Snyderichthys copei* 665–678.
Uzbekistan, *Acipenser nudiventris* 287–301.
Vancouver Is., *Thamnophis sirtalis* 15–23.
Vanuatu, *Mekosuchus kalpokasi* n. sp. (fossil) 632–641; *Laticauda* spp., Muraenidae, Congridae 1098–1101.
Venezuela, *Hypancistrus inspector* n. sp. 86–92; *Oxyropsis acutirostra* 374–390.
Virginia, *Desmognathus f. fuscus* 344–355; *Plethodon cinereus* 865–869.
West Virginia, *Desmognathus f. fuscus* 344–355.
Wisconsin, *Acipenser fulvescens* 287–301.
Wyoming, *Snyderichthys copei* 665–678.
Zambia, *Cyprichromis zonatus* n. sp. 1029–1036.
Zimbabwe, *Pachydactylus tetensis* 586–596.

GROWTH, *Apteronotus anas* = *A. hasemani* (extreme allometry of male snout causes nomen. confusion) 52–61; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (spadefoot toad larval growth & dev. at diff. temps.) 180–189; *Rana clamitans* (tdpl. growth rate reduction in resp. to presence of predator, not predation itself) 445–449; *Scophthalmus aquosus* (size ranges at specific ontog. morph. transitions, corr. w/ beh. & ecol. transitions) 597–609; *Chelonia mydas* (rates in wild turtles, W. Mex., differ from other wild growth rate studies) 610–617; *Menticirrhus saxatilis* (rates of young-of-yr., ocean & estuary beaches) 815–823; *Rhinichthys atratulus* (growth rate & age and size at sex. matur. vary w/ urbanization of watershed) 1122–1127.

HABITAT, *Percina* (all 40 spp. plus 8 other Percid genera) (many changes w/in *Percina* in clad. anal., benthic ancestral to all darters) 1–14; *Desmognathus (monticola, quadramaculatus)* (sympat. spp. differ in diel pttns. of temp. pref., rel. to microhab. diffs.) 62–66; *Sauvagella (robusta* n. sp., *madagascariensis)* (notes) 67–76; *Laticauda colubrina* (50% time on land, 50% in ocean, radiotelem. data) 77–85; *Hypancistrus inspector* n. sp. (rocks & rapids) 86–92; *Carettochelys insculpta* (extreme wet-dry seas. diffs., hab. diffs btwn. seasons, gender diffs. in microhab.) 93–103; *Ptychochromis inornatus* n. sp. (notes) 120–130; *Leptotyphlops (tesselatus* sp. group: *alfredschmidti* n. sp.) (notes) 131–136; *Narcine oculifera* n. sp. (notes) 137–145; *Listrura tetraradiata* n. sp. (notes) 152–156; *Colostethus marchesianus* n. sp. (notes) 157–165; *Anolis trachyderma* (hab. & microhab. sim. thruout range despite morph. diffs.) 275–286; *Natator depressus* (nesting hab., temp. & water cont. of nests) 302–312; *Hoplocephalus stephensii* (microhab. of arboreal snakes) 321–332; Large-river fishes (compare fish assemblgs. btwn. deep water & beach habs. of river, 92% dissim. spp.) 333–343; *Bryobatrachus nimbus* (very low toler. to dry condits. in terrest. nesting frog) 364–373; *Pogonopoma obscurum* n. sp. (notes) 402–410; *Terrapene ornata* (locom. response to slope, substrate & temp., rel. to natural hab.) 411–418; *Paraclinus (arcanus* n.sp., *spectator* n.sp., *rubicundus)* (notes) 419–427; *Hyphessobrycon heliacus* n. sp. (notes) 428–432; *Halaphritis* n. gen. *platycephala* n. sp. (notes) 433–440; *Etheostoma nianguae* (distrib. of endngrd. sp. rel. to hab. variables at 3 spacial scales) 573–585; *Cyprinodon (pisteri* n. sp., *albivelis* n. sp., *arcuatus* n. sp.) (descript., recent changes) 687–705; *Psednos* (10 n. spp. & 3 spp. partially described) (notes on depth) 755–778; *Amphisbaena hiata* n. sp. (notes) 792–797; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* (notes, *K. schioetzi* syntopic w/ *K. arboricola* & *K. cochranae*) 800–814; *Menticirrhus saxatilis* (timing of young-of-yr. use of estuary & ocean beach habs.) 815–823; *Podarcis sicula campestris* (poor freeze- toler. of introduced lizard, requires hibernacula below ground freezing level) 836–842; *Phaeognathus hubrichti* (temp. & humid. of burrow entrances, activ. entirely at entrances & inside burrows) 851–856; *Rhamdia quelen* (cave hab. loses isolation, cave popn. replaced by non-cave conspecifics) 938–942; *Mabuya margaritifer* (microhab. use rel. to foraging beh. & escape from preds.) 943–957; *Gigantactis longicauda* n.sp. (note on depth) 958–961; *Scorpaenodes (quadrispinosus* n. sp., *parvipinnis)* (notes, the 2 spp. syntopic) 973–978; *Corydoras difluviatilis* n. sp. (notes) 1006–1015; *Batrachoseps robustus* n. sp. (high elev., describe var.) 1016–1028; *Cyprichromis zonatus* n. sp. (descript.) 1029–1036; *Astyanax paris* n. sp. (notes) 1052–1056; *Mantidactylus madinika* n. sp. (notes) 1057–1062; *Cnemidophorus abaetensis* n.sp. (notes) 1070–1077; *Rhinichthys atratulus* (growth rate & age and size at sex. matur. vary w/ human disturb. of hab.) 1122–1127; *Elacatinus (gemmatus, pallens, dilepis)* (specific coral reef microhabs.) 1134–1136.

HIBERNATION, *Chelydra serpentina* (htchlngs. from wet-incub. eggs larger at htchng. but have less yolk for overwintering) 504–510; *Podarcis sicula campestris* (poor freeze- toler. of introduced lizard, requires hibernacula below ground freezing level) 836–842.

HISTOLOGY, *Trachelyopterus lucenai* (ultrasturcture of sperm & sperm packets, inseminating catfish) 173–179; *Apalone ferox* (testes, evid. of postnupt. spermatogenic cycle) 779–786.

HOME RANGE, *Carettochelys insculpta* (extreme wet-dry seas. diffs., huge dry seas. home ranges, gender diffs.) 93–103; *Mabuya margaritifer* (male home range larger than female & juv., male territor.) 943–957.

HYBRIDIZATION, *Desmognathus (f. fuscus, f. conanti)* (hybrid. very limited in parapatry, evid. for sp. status of subspp.) 344–355; *Lepomis (microlophus, megalotis)* (*Lepomis* males steal fertil. from conspecific nesting males, leads to hybrid. in multi-spp. nesting colonies) 1102–1105.

LARVAE, *Colostethus caeruleodactylus* (tdpl. dev. in nests, paternal care & transport) 44–51; *Colostethus (marchesianus, caeruleodactylus)* (descr. tdpls. from type locals., tdpl. toothrows disting. closely-rel. spp.) 166–172; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (ecol. & evol. rels. of spadefoot toad larval develop. pttns., data from lab-reared tdpls.) 180–189; *Rana clamitans* (tdpl. growth rate reduction in resp. to presence of predator, not predation itself) 445–449; *Rana catesbeiana* (magnetic compass sense in larval orient.) 466–471; *Ambystoma (opacum, talpoideum)* (eff. of tempor. pond filling-time on body size & surv. to metamorph. in *A. opacum*, & pred. by early-htchng. *A. opacum* on late-htchng. *A. talpoideum*) 511–517; *Taricha granulosa, Ambystoma (gracile, macrodactylum)* (skin darkening from UV-B expos., no protect. eff. of dark skin to UV-B expos.) 748–754; *Crinia georgiana* (coevol. of devel. plastic. & large eggs in frog) 928–937.

LATERAL LINE, Sauvagella (*robusta* n. sp., *madagascariensis), Spratellomorpha bianalis* (lat. line charcs. diagnostic of tribe Ehiravini) 67–76; *Odontobutis (hikimius* n. sp. & other 6 known spp., 2 other spp. removed from genus) (ceph. sensory canal syst. disting. spp.) 104–110; *Aplocheilus lineatus* (blinding not required for testing for detection of surface waves by lateral line) 190–194.

LIFE HISTORY, *Ambystoma texanum* (gravid female met. rate double male & postgravid female rates, hypoth. life hist. corrs.) 824–829.

LIGHT, *Taricha granulosa, Ambystoma (gracile, macrodactylum)* (skin darkening from UV-B expos., no protect. eff. of dark skin to UV-B expos., larval salamanders) 748–754.

LOCOMOTION, *Laticauda colubrina* (gender diffs. in loc. ability rel. to use of land & ocean habs.) 77–85; *Chelydra serpentina* (migr. of htchlngs. to water, var. in speed rel. to water loss) 220–226; *Terrapene ornata* (locom. response to slope, substrate & temp.) 411–418; *Dermochelys coriacea* (during nesting) 653–664; *Scinax hiemalis* (jumping ability influences anti-pred. beh.) 994–1005.

MAGNETORECEPTION, *Rana catesbeiana* (magnetic compass sense in larval orient.) 466–471.

METHODS, *Aplocheilus lineatus* (blinding not required for testing for detection of surface waves by lateral line) 190–194; Lacertidae (5 genera, 12 spp.) (revelation of vert. intercentra by clearing & staining) 208–212; *Rana catesbeiana* (simplified assay for magnetoreception in amphibs.) 466–471; *Etheostoma caeruleum* (comparison of scale & otolith annuli counts for ageing, otolith more consist.) 830–835; *Rana cyanophlyctis* (annual growth rings in tropical frog phalanges) 870–872; *Laticauda* spp., Muraenidae, Congridae (3 spp. of W. Pacific sea kraits much better at catching many eel spp. than humans are, palpation of eels from easy-to-catch kraits is excellent secondary collecting method for eels) 1098–1101; fishes & herps (eff. of formalin on C, N & S isotope values very slight, therefore these values can be used to determ. historic nutrient flow & food web struct. using museum specimens) 1106–1112.

MICROSATELLITE DNA, *Thamnophis sirtalis* (polymorph. loci used to determ. mult. patern. of litters) 15–23; *Crocodylus moreletii* (in popn. gen. & gene flow btwn. popns. of endngrd. sp.) 1078–1091.

MIGRATION, *Chelydra serpentina* (water loss during htchlng. migr. to water rel. to speed of migr., air temp., & precip.) 220–226; *Myliobatis californica* (reduced salin. stresses rays, could be cause of migr. out of bays) 462–465; *Menticirrhus saxatilis* (young-of-yr. mvmts. to and away from estuary & ocean beaches) 815–823; *Crocodylus moreletii* (evid. for migr. btwn. popns., microsat. DNA data) 1078–1091.

MITOCHONDRIAL DNA, *Percina* (all 40 spp. plus 8 other Percid genera) (clad. anal., cyt b data, contradicts prev. recog. ancestral condits.) 1–14; *Apteronotus anas* = *A. hasemani* (nomen. confusion due to extreme male snout hypertrophy, mtDNA & morph. data evid. for single sp.) 52–61; *Salamandra lanzai* (no diversity in cyt b for all popns., rel. to post-Pleist. recolonization) 229–232; Acipenseridae (4 gen., 23 spp.) (in clad. anal., *Huso* & *Pseudoscaphirhynchus* embedded in *Acipenser*, subfam. Scaphirhynchinae not monophyl.) 287–301; *Mustelus (antarcticus, lenticulatus*, sp. A, sp. B) (data support sp. status) 356–363; *Pachydactylus* (the 8 large-bodied spp. & 9 other spp.), *Rhoptropus* (5 spp.) (data in phyl. rels. w/in *Pachydactylus* & btwn. *P.* & *Rhoptropus*) 586–596; Sparoidea (Sparidae [6 subfamilies, all 33 gen., 40 spp.], the 3 other sparoid families) (in phyl anal.) 618–631; Pleuronectiformes (11 families, 42 genera) (in phyl. anal.) 642–652; Centrarchidae (9 gen., 16 spp.) (in phyl. anal.) 897–905; Colubridae (subfam. Homalopsinae [14 spp.], 6 non-homalopsin spp.) (phyl. anal.) 906–915; *Hybopsis amblops* sp. group (7 spp.) (in phyl. anal.) 1092–1097.

MORPHOLOGY, *Ginglymostoma cirratum* (morph. & kinematics of suction feeding in shark) 24–38; *Apteronotus anas* = *A. hasemani* (extreme hypertrophy of male snout causes nomen. confusion) 52–61; *Pseudotropheus galanos* n. sp. (sheared princ. compons. anal. of morphomets., princ. compons. anal. of meristics) 146–151; *Listrura tetraradiata* n. sp. (sp. disting. by fin ray charcs.) 152–156; *Anolis trachyderma* (compare ecol. of 3 mainland popns., all very similar despite morph. diffs. btwn. popns., no evid. of ecomorphs) 275–286; Large-river fishes (morph. diffs. btwn. fish assemblgs. in deep water & along beaches) 333–

343; *Scophthalmus aquosus* (size ranges at specific ontog. morph. transitions, corr. w/ beh. & ecol. transitions) 597–609; *Austrolebias* (19 spp.), *Cynolebias* (2 basal spp.), *Megalebias (all 5 spp.)* (phyl. anal. using 57 morph. charcs.) 916–927; *Cynoscion regalis, Micropogonias undulatus, Leiostomus xanthurus* (sonic muscle size & innerv. varies) 1137–1143.

NESTING, *Colostethus caeruleodactylus* (leaf nests, mult. clutches per nest, paternal care & transport of tdpls.) 44–51; *Carettochelys insculpta* (locs. & mvmnts. for nesting, rel. to home ranges) 93–103; *Natator depressus* (nest depth, temp., water cont., incub. dur., clutch size, htchng. success greater in larger clutches) 302–312; *Bryobatrachus nimbus* (water uptake in newly laid frog eggs in terrest. nests) 364–373; *Chelydra serpentina* (htchlngs. from wet-incub. eggs larger at htchng. but have less yolk for overwintering) 504–510; *Dermochelys coriacea* (nest. ecol. in Costa Rica, severe popn. decline) 653–664; *Chelydra serpentina* (thermal conductiv. of incub. medium aff. egg water exchange) 706–715; *Lepomis (microlophus, megalotis)* (*Lepomis* males steal fertil. from conspecific nesting males, leads to hybrid. in multi-spp. nesting colonies) 1102–1105; *Leptodactylus podicipinus* (new reprod. mode btwn. aquat. & terrest. modes: males construct water-filled basins close to stream edge, foam nests) 1128–1133.

NOMENCLATURE, *Apteronotus anas* = *A. hasemani* (*A. anas* is large male of *A. hasemani*, extreme mature male snout hypertrophy) 52–61; *Odontobutis (hikimius* n. sp. & other 6 known spp., 2 other spp. removed from genus) (remove 2 spp. from genus: *O. aspro & O. wui*) 104–110; *Fundulus auroguttatus* = *F. cingulatus* (lectotype of *F. auroguttatus* design. as neotype of *F. cingulatus*) 227–228; *Plectranthias lamillai* = *P. exsul* (holotype of *P. lamillai* is same as types & non-types of *P. exsul*) 233–238; *Ophichthys melanochir* = *Ophichthus altipennis* (synon. spp., define *O. altipennis*, correct misspelling, describe ontogen. color change) 798–799; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* (n. sp., resurrect *K. arboricola*, redefine *K. cochranae*) 800–814; Centrarchidae (9 gen., 16 spp.) (phyl. anal., mtDNA data, Centrarchidae monophyl., some recomms. to change subfams., *C. gulosus* = *L. gulosus*) 897–905.

OLFACTION, *Leiopelma hamiltoni* (response to fecal chem. signals in primitive frog) 679–686; *Mabuya margaritifer* (evid. for lack of chemorecep. to prey) 943–957; *Gambusia affinis* (male response to female sex pheromones) 1113–1117.

ORIENTATION, *Aplocheilus lineatus* (detection of diffs. in surface waves by lateral line) 190–194; *Rana catesbeiana* (magnetic compass sense in larval orient.) 466–471; *Gigantactis* sp. (upside-down swimming beh. in deep sea fish) 1144–1146.

OSTEOLOGY, *Sauvagella (robusta* n. sp., *madagascariensis)* (in disting. spp.) 67–76; *Hypancistrus (inspector* n. sp., *zebra)* (charcs. in diagn. of genus) 86–92; Lacertidae (5 genera, 12 spp.) (interspp. & intraspp. var. in vert. intercentra, phyl. implics.) 208–212; *Acipenser (brevirostrum, oxyrinchus)* (struct. & ontog. of rostral canal bones, spp. diffs.) 213–219; Muraenidae (15 genera, 38 spp.) (newly discovered pectoral bones in 24 of the 38 spp.) 483–488; *Mekosuchus kalpokasi* n. sp. (fossil) (maxilla) 632–641; Amphisbaenia (4 fams., all 23 extant gen., 32 spp.) (appendic. skel., compare w/in Amphisbaenia & with other limbless squamates) 719–738; *Rana cyanophlyctis* (annual growth rings in tropical frog phalanges) 870–872.

PAEDOMORPHISM, *Ambystoma talpoideum* (same met. rates of paedomorphs & metamorphs in water, on land metamorphs much lower met. rate than in water) 489–495.

PALEONTOLOGY, *Mekosuchus kalpokasi* n. sp. (fossil) (island fossil, extinct. contemp. w/ human arrival) 632–641; Cyprinidae (tribe Plagopterini [*Lepidomeda, Meda, Plagopterus,* & incl. *Snyderichthys*], 17 other gen.) (fossils used to estim. rate of mtDNA cyt b divergence in phyl anal.) 665–678.

PARASITES, *Anolis sabanus* (unusually low virulence in this anole of 3 spp. of malaria) 39–43.

PHEROMONES, *Leiopelma hamiltoni* (response to fecal chem. signals in primitive frog) 679–686; *Gambusia affinis* (from females at diff. stages of reprod. cycle prod. diff. male sex. behs.) 1113–1117.

PHYLOGENETIC ANALYSIS, *Percina* (all 40 spp. plus 8 other Percid genera) (clad. anal., mtDNA data, subgen. replaced by spp. clades, reasses. of prev. recog. plesiomorphic chars.) 1–14; *Sauvagella (robusta* n. sp., *madagascariensis), Spratellomorpha bianalis* (clad. hypoths. of rels. of genera in tribe Ehiravini) 67–76; *Hypancistrus (inspector* n. sp., *zebra)* (clad. discussion of genus, rel. to the other loricariid genera, osteol. charcs.) 86–92; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (clad. anal. of spadefoot toad develop. charcs., data from lab-reared tdpls.) 180–189; Lacertidae (5 genera, 12 spp.) (interspp. & intraspp. var. in vert. intercentra, phyl. implics.) 208–212; Acipenseridae (4 gen., 23 spp.) (clad. anal., mtDNA data, *Huso* & *Pseudoscaphirhynchus* embedded in *Acipenser,* subfam. Scaphirhynchinae not monophyl.) 287–301; *Desmognathus (f. fuscus, f. conanti)* (clad. anal., alloz. data, evid. for sp. status of these subspp., possible sp. status for popns. w/in these) 344–355; *Pogonopoma (obscurum* n. sp., *wertheimeri, Pogonopomoides parahybae* = *Pogonopoma parahybae), Rhinelepis* (3 spp.), *Pseudorinelepis genibarbis* (clad. anal. of *Rhinelepis* group, biogeogr. implics.) 402–410; *Etheostoma tetrazonum* (clad. anal. of popns., evid. for 2 spp., mtDNA data, biogeogr. implics.) 450–455; Clupeoidei (superfamilies Engrauloidea, Clupeoidea, Pristigasteroidea) (skeletal evid. that Clupeoidea & Engrauloidea are sister groups, discuss sister-group rels. btwn. Clupeomorpha & Ostariophysi) 496–503; *Pachydactylus* (the 8 large-bodied spp. & 9 other spp.), *Rhoptropus* (5 spp.) (clad. anal., mtDNA data, large-bodied *Pachydactylus* not monophyl., large size plesiomorphic, sis-

ter spp. rels., conflicting trees w/ *Rhoptropis*) 586–596; Sparoidea (Sparidae [6 subfamilies, all 33 gen., 40 spp.], the 3 other sparoid families) (clad. anal., mtDNA data, some sparid subfams. not monophyl.) 618–631; Pleuronectiformes (11 families, 42 genera) (clad. anal., mtDNA data) 642–652; Cyprinidae (tribe Plagopterini [*Lepidomeda, Meda, Plagopterus,* & incl. *Snyderichthys*], 17 other gen.) (clad. anal., mtDNA data, Plagopterins incl. *Snyderichthys* are monophyl., rels. w/in tribe, sister group to tribe) 665–678; Centrarchidae (9 gen., 16 spp.) (clad. anal., mtDNA data, Centrarchidae monophyl., some rels. btwn. gen. ambig., some recomms. to change subfams., *C. gulosus* = *L. gulosus,* Elassomatidae affin. uncertain) 897–905; Colubridae (subfam. Homalopsinae [14 spp.], 6 non-homalopsin spp.) (clad. anal., mtDNA data, Homalopsinae monophyl., sister group hypoths. w/in Homalopsinae, uncertain rel. of Homalopsinae w/ other Colubrids) 906–915; *Austrolebias* (19 spp.), *Cynolebias* (2 basal spp.), *Megalebias (all 5 spp.)* (clad. anal., 57 morph. charcs., clade of *Austrolebias* & *Megalebias,* both gen. monophyl., evid. of inter & intra-gen. rels.) 916–927; *Characidium stigmosum* n. sp. (phyl. notes on possible cladistic rels. of n. sp. w/ congeners) 988–993; *Corydoras difluviatilis* n. sp. (n. sp. basal to clade of *Brochis* + most *Corydoras,* assigned to *C.* b/c of rudiment. knowledge of Corydoradine phylog.) 1006–1015; *Otocinclus tapirape* n. sp. (recent clad. anal. of genus modified to include n. sp., unusual ribs of n. sp. may have higher level phyl. signif.) 1063–1069; *Hybopsis amblops* sp. group (7 spp.) (clad. anal., morph. & mtDNA charcs., some diffs. from prev. anals. w/ morph. charcs. only) 1092–1097; Emydidae (hemoglobin vars., clad. implics., evid. genus *Clemmys* not monophyl.) 1118–1121.

PHYSIOLOGY, *Bryobatrachus nimbus* (physiol. & devel. resonse to dry condits. in embryos of terrest. nesting frog) 364–373; *Myliobatis californica* (eff. of reduced salin. on respiration) 462–465; *Ambystoma talpoideum* (same met. rates of paedomorphs & metamorphs in water, on land metamorphs much lower met. rate than in water) 489–495; *Chelydra serpentina* (thermal conductiv. of incub. medium aff. egg water exchange) 706–715; *Ambystoma texanum* (gravid female met. rate double male & postgravid female rates) 824–829; *Podarcis sicula campestris* (poor freeze- toler. of introduced lizard, requires hibernacula below ground freezing level) 836–842; *Scinax hiemalis* (physiol. condit. influences anti-pred. beh.) 994–1005.

POPULATIONS, *Colostethus marchesianus* n. sp. (morph., color. & vocs. evid. that popns. distant from type local. not conspecific) 157–165; *Anolis trachyderma* (compare ecol. of 3 mainland popns., all very similar despite morph. diffs. btwn. popns., no evid. of ecomorphs) 275–286; *Etheostoma tetrazonum* (clad. anal. of popns. in diff. river drainages, evid. for 2 spp.) 450–455; *Mabuya agilis* (inter-popn. var. in female size & litter size w/ hab.) 857–864; *Rhamdia quelen* (non-cave conspecifics replace cave popn. due to competit., not hybrid.) 938–942; *Crocodylus moreletii* (popn. gens., high gen. heterogen. w/in popns., evid. for migr. btwn. popns., microsat. DNA data) 1078–1091.

PREDATION, *Tupinambis teguixin* (electromyogr. of bite force rel. to prey handling) 111–119; *Agkistrodon piscivorus* (defensive beh. towards human aggress.) 195–198; *Chelydra serpentina* (avoid. of pred. possibly rel. to speed of migr. of htchlngs. to water, eff. on water loss during migr.) 220–226; *Plethodon (cinereus, hoffmani)* (char. displcmt. results in diff. prey types in sympatry) 391–401; *Rana clamitans* (embryo & tdpl. devel. rate var. in resp. to presence of predator, not predation itself) 445–449; *Cyclopterus lumpus* (ontog. chngs. in prey, stom. conts.) 472–476; *Ambystoma (opacum, talpoideum)* (eff. of early-htchng. *A. opacum* pred. on later-htchng. *A. talpoideum*) 511–517; *Pachydactylus* (the 8 large-bodied spp.) (integument loss as pred. defence mech. not monophyl.) 586–596; *Gloydius shedaoensis* (defensive beh. towards human aggress. in venomous island snake) 843–850; *Mabuya margaritifer* (foraging mode, prey types, no gender diffs., prey incl. toxic millipedes) 943–957; *Scinax hiemalis* (factors influencing anti-pred. beh.) 994–1005; *Laticauda* spp., Muraenidae, Congridae (3 spp. of W. Pacific sea kraits much better at catching many eel spp. than humans are, live kraits excellent bioassay method for eels) 1098–1101.

REPRODUCTION, *Thamnophis sirtalis* (mult. patern. of litters, microsat. DNA evid., geogr. var.) 15–23; *Colostethus caeruleodactylus* (seas., fecund., nesting, paternal care & transport of tdpls., tdpl. devel., ctshp. beh., male territ.) 44–51; *Laticauda colubrina* (ctshp. on land, feed in ocean) 77–85; *Carettochelys insculpta* (gender diffs. in activ., mvmnts. & home range size, gravidity influences) 93–103; *Narcine oculifera* n. sp. (notes) 137–145; *Trachelyopterus lucenai* (ultrastructure of sperm & sperm packets, inseminating catfish) 173–179; *Natator depressus* (nesting environ. & htchng. success of sea turtle) 302–312; *Leuresthes tenuis* (temp. aff. htchng. success in terestrial spawning fish) 313–320; *Bryobatrachus nimbus* (very low toler. to dry condits. in terrest. nesting frog) 364–373; *Trachemys scripta* (ontogen. change in male ctshp. beh.) 456–461; *Chelydra serpentina* (htchlngs. from wet-incub. eggs larger at htchng. but have less yolk for overwintering) 504–510; *Ambystoma opacum* (eff. on larval body size & surv. to metamorph. of time diff. in htchng.: advantage in early htchng.) 511–517; *Dermochelys coriacea* (clutches per season, time btwn. nest. seasons) 653–664; *Chelydra serpentina* (thermal conductiv. of incub. medium aff. egg water exchange) 706–715; *Apalone ferox* (postnupt. spermatogenic cycle, sex. matur. & body size compared to other turtles) 779–786; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* (calls, calling sites, hab. of reprod.) 800–814; *Ambystoma texanum* (gravid female met. rate double male & postgravid female rates) 824–829; *Mabuya agilis* (inter-popn. var. in female size & litter size w/ hab.) 857–864; *Crinia georgiana* (coe-

vol. of devel. plastic. & large eggs in frog) 928–937; *Rana sevosa* (yrs. of reprod. failure common in isol. popn., low adult surv., sp. extremely endngrd.) 962–972; *Bufo fowleri* (correl. of calling effort w/ body size, growth rate, body temp. & chorus tenure) 979–987; *Batrachoseps robustus* n. sp. (high altitude salamander: seas. in diff. habs., lg. eggs, small clutch size, slow dev.) 1016–1028; *Cyprichromis zonatus* n. sp. (female mouth brooding, females & juvs. in mixed-spp. schools, male territor., male ctshp. beh.) 1029–1036; *Lepomis (microlophus, megalotis)* (*Lepomis* males steal fertil. from conspecific nesting males, leads to hybrid. in multi-spp. nesting colonies) 1102–1105; *Gambusia affinis* (pheromones from females at diff. stages of repr od. cycle prod. diff. male sex. behs.) 1113–1117; *Rhinichthys atratulus* (growth rate & age and size at sex. matur. vary w/ urbanization of watershed) 1122–1127; *Leptodactylus podicipinus* (new reprod. mode btwn. aquatic & terrest. modes, revise classif. of reprod. modes for genus) 1128–1133.

RESPIRATION, *Myliobatis californica* (eff. of reduced salin. on respiration) 462–465: *Ambystoma talpoideum* (same oxygen consump. of paedomorphs & metamorphs in water, on land metamorphs consumed much less oxygen) 489–495; *Etheostoma nianguae* (oxygen levels one of many microhab. variables in site suitability for endngrd. sp.) 573–585.

SALINITY, *Myliobatis californica* (reduced salin. stresses rays) 462–465; Colubridae (subfam. Homalopsinae [14 spp.], 6 non-homalopsin spp.) (phyl. anal. suggests salt toler. evolved or was lost mult. times) 906–915.

SEX, *Natator depressus* (sex ratio female-skewed at study site) 302–312; *Ambystoma texanum* (gender diffs. in met. rate during reprod.) 824–829.

SEXUAL DIMORPHISM, *Apteronotus anas* = *A. hasemani* (extreme hypertrophy of male snout causes nomen. confusion) 52–61; *Hypancistrus inspector* n. sp. (odontoids on opercle) 86–92; *Anolis trachyderma* (females larger than males) 275–286; *Hyphessobrycon heliacus* n. sp. (extensive fin dimorph.) 428–432; *Rimicola (cabrilloi* n. sp., & all 4 other spp.) (strong sex. dimorph. of n. sp. unusual in family, sim. to 2 congeners) 441–444; *Mabuya margaritifer* (males larger due to male territor. not diet diffs.) 943–957; *Characidium stigmosum* n. sp. (dark marks on male fins) 988–993; *Corydoras difluviatilis* n. sp. (of genital papilla) 1006–1015; *Mantidactylus madinika* n. sp. (smallest sp. in family, females larger than males) 1057–1062.

SIZE, *Apteronotus anas* = *A. hasemani* (extreme hypertrophy of male snout causes nomen. confusion) 52–61; *Carettochelys insculpta* (long extreme dry seas. rel. to huge home ranges) 93–103; *Trachemys scripta* (ontogen. change [with body size increase] in male ctshp. beh.) 456–461; *Cyclopterus lumpus* (ontog. chngs. in prey size, stom. conts.) 472–476; *Thamnophis sirtalis* (thermal advantage to melanism only w/ large body size) 477–482; *Chelydra serpentina* (htchlngs. from wet-incub. eggs larger at htchng. but have less yolk for overwintering) 504–510; *Scophthalmus aquosus* (size ranges at specific ontog. morph. transitions, corr. w/ beh. & ecol. transitions) 597–609; *Dermochelys coriacea* (nest. turtles in Costa Rica smaller than in other popns.) 653–664; *Leiopelma hamiltoni* (body size aff. response to fecal chem. signals) 679–686; *Mabuya agilis* (inter-popn. var. in female size & litter size w/ hab.) 857–864; *Bufo fowleri* (body size weakly correl. w/ calling effort, body mass decreased w/ extended calling, increased w/ extended non-calling periods) 979–987; *Scinax hiemalis* (body size influences anti-pred. beh.) 994–1005; *Mantidactylus madinika* n. sp. (one of smallest frogs in world, smallest sp. in family, females larger than males) 1057–1062.

SOUND, *Cynoscion regalis, Micropogonias undulatus, Leiostomus xanthurus* (sonic muscle size & innerv. varies) 1137–1143.

SURVIVAL, *Rana sevosa* (low adult surv. in isol. popn., years of reprod. failure common, sp. in extreme danger of extinct.) 962–972.

SYSTEMATICS, *Percina* (all 40 spp. plus 8 other Percid genera) (phyl. anal. of genus, mtDNA data, subgen. replaced by spp. clades, questions ancestral charcs. & spp.) 1–14; *Apteronotus anas* = *A. hasemani* (extreme hypertrophy of male snout causes nomen. confusion, mtDNA & morph. data) 52–61; *Sauvagella (robusta* n. sp., *madagascariensis), Spratellomorpha bianalis* (revise *Sauvagella,* n. sp., genus in monophyl. tribe Ehiravini, clad. hypoths. of Ehiravini genera) 67–76; *Hypancistrus (inspector* n. sp., *zebra)* (n. sp., phylogen. diagn. of genus) 86–92; *Odontobutis (hikimius* n. sp. & other 6 known spp., 2 other spp. removed from genus) (n. sp., rediagn. genus, remove 2 spp. from genus, key to the 7 known spp. of genus) 104–110; *Ptychochromis inornatus* n. sp. (n. sp., discuss compar. w/congeners & sp. status of several congeners) 120–130; *Leptotyphlops (tesselatus* sp. group: *alfredschmidti* n. sp., *teaguei, tricolor)* (compare n. sp. to congeners) 131–136; *Narcine oculifera* n. sp. (compare n. sp. to congeners) 137–145; *Pseudotropheus galanos* n. sp. (n. sp. in *P. williamsi* complex, compare n. sp. to congeners incl. undescribed spp.) 146–151; *Listrura tetraradiata* n. sp. (compare n. sp. to congeners, phylgen. notes) 152–156; *Colostethus marchesianus* n. sp. (redescript.; morph., color. & vocs. evid. that popns. distant from type local. not conspecific) 157–165; *Colostethus (marchesianus, caeruleodactylus)* (descr. tdpls. from type locals., tdpl. toothrows disting. closely-rel. spp.) 166–172; *Desmognathus (f. fuscus, f. conanti)* (phyl. anal., alloz. data, evid. for sp. status of these subspp., possible sp. status for popns. w/in these) 344–355; *Mustelus (antarcticus, lenticulatus,* sp. A, sp. B) (support for sp. stat., alloz., mtDNA & precaud. vert. count data) 356–363; *Oxyropsis (wrightiana, carinata, acutirostra)* (resurrect genus, diagn. & redescribe spp., key to spp., rels. to other Loricariids, phyl. notes) 374–390; *Pogonopoma (obscurum* n. sp., *wertheimeri, Pogonopomoides parahybae* = *Pogonopoma parahybae), Rhinelepis* (3 spp.), *Pseudorinelepis*

genibarbis (phyl. anal. of *Rhinelepis* group, expand *Pogonopoma* to include *Pogonopomoides* & n. sp., key to genera & spp. of *Rhinelepis* group) 402–410; *Paraclinus (arcanus* n.sp., *spectator* n.sp., *rubicundus)* (2 n. spp. & elevate sp. from synon., all 3 spp. are Brazilian endemics, key to spp., clad. notes on Brazil-Caribb. spp. pairs & other closely-rel. congeners) 419–427; *Hyphessobrycon heliacus* n. sp. (n. sp. compared to sim. congeners) 428–432; *Halaphritis* n. gen. *platycephala* n. sp. (new primitive genus & sp., compared to other prim. genera, discuss. of evol., clad. rels., & phylogen. hypoths.) 433–440; *Rimicola (cabrilloi* n. sp., & all 4 other spp.) (n. sp. compared to congeners, key to spp.) 441–444; *Etheostoma tetrazonum* (phyl. anal. of popns., evid. for 2 spp., mtDNA data, biogeogr. implics.) 450–455; Clupeoidei (superfamilies Engrauloidea, Clupeoidea, Pristigasteroidea) (skeletal evid. that Clupeoidea & Engrauloidea are sister groups, discuss sister-group rels. btwn. Clupeomorpha & Ostariophysi) 496–503; *Mekosuchus kalpokasi* n. sp. (fossil) (descript. from maxilla, compare to congeners) 632–641; *Cyprinodon (pisteri* n. sp., *albivelis* n. sp., *arcuatus* n. sp.) (n. spp. compared to congeners) 687–705; *Platogobius grandoculus* n. sp. (n. sp., discuss. of genus, few specimens) 716–718; Amphisbaenia (4 fams., all 23 extant gen., 32 spp.) (phyl. compar. of appendic. skel. w/in Amphisbaenia & with other limbless squamates) 719–738; *Trichomycterus (belensis* n. sp., *alterus)* (n. sp. & redescript., compare to congeners) 739–747; *Psednos* (10 n. spp. & 3 spp. partially described) (3 spp. groups, key to all 25 named & 4 unnamed spp. of genus) 755–778; *Karsten* n. gen. *totoyensis* (n. gen., key to *Trypauchen* genus group, compare to other amblyopine genera, sister groups hypoths. w/in Ampblyopinae) 787–791; *Amphisbaena (hiata* n. sp., *dubia, heterozonata)* (n. sp. compared to close rels. & other congeners) 792–797; *Ophichthys melanochir* = *Ophichthus altipennis* (synon. spp., define *O. altipennis,* correct misspelling, describe ontogen. color change) 798–799; *Kassina (schioetzi* n. sp., *arboricola, cochranae)* (n. sp., resurrect *K. arboricola,* redefine *K. cochranae,* compare to spotted *Kassina* elsewhere, key to W. African *Kassina* includes 4 non-spotted spp.) 800–814; Centrarchidae (9 gen., 16 spp.) (phyl. anal., mtDNA data, Centrarchidae monophyl., some rels. btwn. gen. ambig., some recomms. to change subfams., *C. gulosus* = *L. gulosus,* Elassomatidae affin. uncertain) 897–905; *Gigantactis longicauda* n.sp. (n. sp. only single specimen, member of *G. macronema* group, key to sp. group) 958–961; *Characidium stigmosum* n. sp. (phyl. notes on possible cladistic rels. of n. sp. w/ congeners) 988–993; *Corydoras difluviatilis* n. sp. (prim. n. sp. most sim. to *C. garbei,* n. sp. basal to *Brochis* + most *Corydoras)* 1006–1015; *Batrachoseps (robustus* n. sp., *campi, wrighti)* (n. sp. in subgen. *Plethopsis,* compare n. sp. [allozs., body length & proportions, tooth #s] to closest rels., *B. campi* & *B. wrighti,* n. sp. sister to *B. wrighti,* mtDNA data) 1016–1028; *Cyprichromis zonatus* n. sp. (n. sp. compared to congeners [morph. data], key to the 4 spp. of genus) 1029–1036; *Kaloula walteri* n. sp. (n. sp. compared to close rels., *K. rigida* & *K. picta* & other congeners, has unique call, many unrecognized spp. in genus) 1037–1051; *Astyanax paris* n. sp. (n. sp. compared to congeners) 1052–1056; *Mantidactylus madinika* n. sp. (n. sp. smallest in family, in subgenus *Blommersia,* incl. charcs. of genus *Mantella* which is phyl. nested in paraphyl. *Mantidactylus)* 1057–1062; *Otocinclus tapirape* n. sp. (n. sp. compared to congeners, recent phyl. anal. of genus modified to include n. sp.) 1063–1069; *Cnemidophorus abaetensis* n. sp. (n. sp. compared to the 3 other members of *ocellifer* sp. complex) 1070–1077; *Apostolepis sanctaeritae* (redescript., correct orig. descript., closest rels., compare to & key to spp. w/ sim. color pttn.) 1147–1151.

TEMPERATURE, *Desmognathus (monticola, quadramaculatus)* (sympat. spp. differ in diel pttns. of temp. pref., rel. to microhab. diffs.) 62–66; *Laticauda colubrina* (maintain high body temp. on land & ocean) 77–85; *Scaphiopus* (all spp.), *Spea* (all spp.), *Pelobates* (3 spp.), *Pelodytes ibericus* (spadefoot toad larval develop. at diff. temps.) 180–189; *Chelydra serpentina* (air temp. aff. htchlng. water loss during migr. to water) 220–226; *Anolis trachyderma* (low body temp.) 275–286; *Natator depressus* (temp. of nests, daily & seas. var., high temp. for sea turtle nests) 302–312; *Leuresthes tenuis* (temp. aff. htchng. success in terestrial spawning fish) 313–320; *Terrapene ornata* (locom. response to slope, substrate & temp.) 411–418; *Thamnophis sirtalis* (thermal advantage to melanism only w/ large body size) 477–482; *Etheostoma nianguae* (one of many microhab. variables in site suitability for endngrd. sp.) 573–585; *Chelydra serpentina* (thermal conductiv. of incub. medium aff. egg water exchange) 706–715; *Podarcis sicula campestris* (poor freeze-toler. of introduced lizard, requires hibernacula below ground freezing level) 836–842; *Phaeognathus hubrichti* (diel & seas. activ. pttns. rel. to temp.) 851–856; *Scorpaenodes (quadrispinosus* n. sp., *parvipinnis)* (n. sp. compared to very sim. *S. parvipinnis,* the 2 spp. syntopic in Figi, compare n. sp. to all other congeners) 973–978; *Bufo fowleri* (body temp. explains only 4% of indiv. var. in calling effort) 979–987; *Scinax hiemalis* (temp. influences anti-pred. beh.) 994–1005.

TOXICITY, *Mabuya margaritifer* (prey types incl. toxic millipedes) 943–957.

VISION, *Karsten* n. gen. *totoyensis* (lacks eyes) 787–791.

WATER BALANCE, *Chelydra serpentina* (factors aff. water loss during htchlng. migr. to water) 220–226; *Natator depressus* (water cont. of nest environ. low for sea turtles) 302–312; *Bryobatrachus nimbus* (very low toler. to dry condits. in terrest. nesting frog) 364–373; *Chelydra serpentina* (htchlngs. from wet-incub. eggs larger at htchng. but have less yolk for overwintering) 504–510; *Chelydra serpentina* (thermal conductiv. of incub. medium aff. egg water exchange) 706–715.